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EXCEPTION TO BONAPARTE'S OPINION

Congressman Charles E. Littlefield, of Maine, a member of the judiciary committee as well as of the merchant marine committee of the house of representatives, received from Secretary Metcalf, of the navy department, a copy of Attorney General Bonaparte's opinion concerning the transportation of coal for the navy department from one American port to another American port in foreign bottoms. He has written a convincing letter to Secretary Metcalf, taking exceptions to Bonaparte's views, and as it is of great interest it is published, as follows:

Rockland, Me., Oct. 14, 1907.

Hon. Victor H. Metcalf,
Secretary of the Navy,
Washington, D. C.

My Dear Secretary:—Your very kind note of Oct. 5, enclosing a copy of the opinion of the attorney general and the memorandum relative to American vessels offered for the transportation of coal, at hand, and I am very greatly obliged to you therefor.

I have examined the opinion of the attorney general with care and the authorities upon which he relies, and I feel bound to say that I am not able to agree with him in the conclusions he has reached on the statute in question.

Without going over the matter fully, and briefly for the following reasons: First, I do not think he properly applies the common law rule which he found in Bacon's Abridgement. The whole rule as found in the abridgement provides in addition to the portion quoted by the attorney general, that the general rule is "Where an act of parliament is made for the public good,

for the advancement of religion and justice, or to prevent injury and wrong, the king is bound by such act, though not particularly named therein."

If the act confining the American coastwise trade to American vessels was not enacted "for the public good," I would like to inquire for what purpose it is supposed to have been enacted. If enacted "for the public good," I am at a loss for a reasonable contention against us as by the express provisions of the common law maxim upon which the attorney general relies in that case the government "shall be bound by such act though not particularly named therein." This maxim will be found quoted in the case upon which he relies. *U. S. vs. Knight*, 14 Peters 315.

The portion of the maxim upon which the attorney general relies in a sense is an exception and reads in the case referred to as follows:

"But where a statute is general, and thereby any prerogative, right, title or interest is divested or taken from the king, in such case he shall not be bound, unless the statute is made by express words to extend to him." *Ibid*.

Upon what theory the right of the government to engage in coastwise trade is a "prerogative right, title or interest"—that is to say, a right, title or interest enjoyed by a sovereign as distinct from a citizen, a privilege which inheres in the sovereign, but does not exist in the citizen in the same degree—I think it would be somewhat difficult to explain. Blackstone says "by the word prerogative, we are to understand the character and power which the sov-

ereign hath over and above all other persons in right of his regal dignity, and which though part of the common law of the country, is out of its ordinary course." It may be that the United States "hath" or has had "over and above all other persons" a right to engage in the coastwise trade, or that its rights in that regard are distinguishable from and superior to those of an individual citizen out of the "ordinary course" of the law, but if that be true it is safe to say that the attorney general is entitled to the credit of discovering and for the first time asserting this convenient feature of "regal dignity."

While it may be true that this rule in relation to "the public good" and "prerogative right, title or interest" has undoubtedly been adopted by the United States, the cases relied upon by the attorney general, in my opinion, are not especially happy for the purpose of sustaining his present contention.

In the case of *U. S. vs. Knight*, 14 Peters 301, while it is true that the court stated the maxim which I have quoted in full, but which was only quoted in part by the attorney general, it is to be observed that in that case the court held that in a statute which did not refer to the government in express terms but which did impair its rights and privileges, inasmuch as it increased the rights and privileges of the debtor in question, did apply to the United States, although it was not mentioned in the statute. The court says, "We shall best carry into effect the legislative intent by construing the executions at the suit of the United States to be embraced within the act of 1828"

(14 Peters 314), although the United States were not expressly or indirectly even mentioned in the act of 1828, so that one case upon which the attorney general relies held that the United States was covered by the statute in question although not mentioned therein.

In the case of *U. S. vs. Herron*, 20 Wall. 251, the court quoted the maxim above referred to, giving both the affirmative and negative portion thereof as I have given them above, and predicated their opinion upon two propositions. First, because the United States was not named in any provisions of the Bankruptcy Act (question being whether they were bound by the provisions of the Bankruptcy Act and the debt due the United States was discharged thereby); and second, "That many of the provisions describing the rights, duties and obligations of creditors are in their nature inapplicable to the United States, and that if held to include the United States, could not fail to become a constant and irremediable source of public inconvenience and embarrassment. Viewed in the light of these suggestions," the court said, "and of the language employed in the act, the court is of the opinion that the words 'creditor or creditors,' as used in the several provisions of the Bankruptcy Act, do not include the United States." Note the significance of the second reason given in the summary by the court in the expression "of the language employed in the act." The court had occupied several pages in the opinion in detailing the provisions of the act for the purpose of demonstrating the inapplicability of its provision to the United States. They were evidently not satisfied with the old common law maxims and felt it necessary to re-enforce their conclusions by the provisions of the act itself, although they refer to the list of authorities which proceeded upon the common law ground that the United States was not expressly mentioned in the act.

Moreover, these decisions relating to the Bankruptcy Law and Insolvency Law and the Statute of Limitations are nearly all of them in the last analysis banked upon old English cases adopting similar construction under these circumstances. These cases, under these circumstances, are by no means sufficient to demonstrate that the act in question was not "made for the public good," and that under such circumstances the government is not "bound by such act though not particularly named

therein." The suggestion of the attorney general that the provisions of the act in question cannot apply to property owned by the government, because a proceeding for forfeiture would "be nugatory and futile," seems to me to proceed upon a very fundamental misconception of the character of the statute he was construing. The attorney general seems to proceed upon the theory that all there is of that statute is the penalty. On the contrary, the statute consists of a prohibition and a penalty. The prohibition is "That no merchandise shall be transported by water" * * * "in any other vessel than a vessel of the United States." The penalty is "forfeiture thereof." The attorney general seems to be under the impression that because the government has ingeniously created a condition by purchasing coal in one American port for transportation to another, and thus made the application of the penalty inconsistent or ineffective or, as he says, "nugatory," that the government has thus succeeded by indirection in avoiding the prohibition.

I do not believe any court would hold that it was thus within the power of the government to render a proper piece of legislation inoperative. It is too obvious for discussion that the transportation of the coal from one American port to another and then its purchase by the government would be clearly within the provisions of the act so far as the transportation is concerned. This the government understands and now the proposition is that the government can avoid or eliminate this statute and break down a law specifically enacted "for the public good" by simply becoming the owner of the property which becomes the subject of such transportation, and thus suspend the operation of the coastwise laws in the face of a direct and explicit prohibitory provision.

This may satisfy the department and the attorney general, but I do not believe that any court would ever tolerate such an evasion of the statute. While the penalty may be ineffective, what warrant of law is there for holding that because that condition has been directly created by the government, thus relieving itself of the penalty feature of the statute, that it is not violating the law in letter and spirit, although on account of such an unforeseen and unexpected condition and therefore unprovided for, it succeeds in avoiding the penalty?

Even if the government has suc-

ceeded by its operation in rendering the penalty nugatory or ineffective, this does not demonstrate by any means that the acts are not still prohibited by law and within the scope of the statute. It will not be difficult to find numerous instances in the statutes of the United States where things are prohibited to be done, and if done would, therefore, be in clear violation of law to which violation no penalty is attached. Such statutes consist simply of a prohibition without any penalty attached thereto, so that a prohibition without a penalty is by no means unusual.

Would the attorney general contend that if this was simply a prohibition without a penalty that for that reason the government could properly violate the law? If, like the two preceding sections of the original act of 1817, the penalty was forfeiture of both vessel and cargo, would it be claimed that because the government could evade the penalty of forfeiture of the cargo by indirection it would by that act give the vessel owner immunity also, and make it lawful for a foreign vessel against the express prohibition of a statute to transport coastwise merchandise, simply because of the incongruity involved in enforcing a separate and distinct penalty? It should be borne in mind that the act of unlawfully transporting the cargo does not operate to transfer the property therein to the government, although forfeiture is the penalty. The actual forfeiture of the cargo is a judicial act over which the executive has no control. The disposition of the forfeited cargo after the forfeiture has been judicially determined is entirely for the court. Until this determination is made the title remains in the original owner. Although the cargo may happen to be the property of the government, acquired in the exercise of its executive capacity, it by no means follows that the judicial branch does not have the power to make such an order, with reference to such a cargo, as would not only embarrass, but would effectively penalize the government for the action of the officers of one of its departments in deliberately violating the law. The court is not confined in the exercise of its discretion to vesting the title to the property forfeited in the government. It is only such a decree that would seem to be anomalous or "nugatory."

I should doubt if in practice such a decree is ever made. The usual course no doubt is to order its sale,

UNION IRON WORKS TO BE REHABILITATED

the proceeds to be turned over to the government in whole or in part (in part in case the law as to informers applies). Circumstances can be conceived under which the court's order might be very far from "nugatory" so far as the government is concerned. I do not suppose that anyone will contend that the navy department is not clearly within the spirit and policy of this act. It was enacted in pursuance of a policy up to that time vigorously and consistently followed of aiding and maintaining our merchant marine.

It gave to this marine for its benefit the monopoly of our coastwise trade. A probable result was to increase the rates of freight.

This burden would in the first instance be borne by the individual shipper. A fortiori then this burden should be borne not only by the aggregate of all the shippers, but of all the people, the government itself, for the same purpose to accomplish the same end. You will, of course, see that I have not attempted an exhaustive discussion of this important question, either upon authority or reason, but have only called your attention to some of the most obvious considerations involved in a proper construction of the act.

In conclusion, please allow me to say that I regret very much that the department has not felt bound, in so far as it may have been in doubt, to resolve it in favor of the development of our own marine, without the development of which on an adequate scale the present condition demonstrates that the enormous sums that have been expended in creating a new navy are likely to prove to have been improvidently expended, as we have provided for no sufficient cargo carrying marine, whose services we have a right to compel in a time of real exigency to keep the navy supplied with coal, munitions of war and other supplies wherever it may have occasion to go. A battleship without coal is little better than a "painted ship on a painted ocean." I am,

Yours very respectfully,

(Signed) C. E. LITTLEFIELD.

The steamer Frederick B. Wells of the Peavey Steamship Co.'s fleet of Duluth, ran on the bank at the entrance of Ashtabula harbor. While entering the harbor the captain dropped her anchor to hold her up, but in moving ahead she ran over the anchorage. She was unloaded and taken to Lorain where she was placed in dry dock for repairs.

Mr. Charles M. Schwab, owner of the Union Iron Works, has definitely announced his intention to rehabilitate the plant and to put it in first-class shape for any kind of work that presents itself. The most modern machinery will be installed, including the complete equipment of the plant with electric traveling cranes. The details of reconstruction are now being worked out. More than 1,000 merchants and manufacturers met Mr. Schwab at the Merchant Exchange and listened to an address by him. He was extremely careful and direct in what he said and confined his remarks exclusively to a discussion of industrial and not political topics. He said:

"The first thing I want you to know is that I am not so presumptuous as to tell you about your own city. I am making but a short stay here and I do not feel capable of making any valuable suggestions to men who have spent their lives here. But newcomers sometimes gather new ideas, and it may be that some things have suggested themselves to me that would not seem extraordinary or worthy of great consideration to you who are so familiar with them.

"In the first place, nothing that I say here today is to be construed as having any bearing on the political situation or the labor situation, and I intend my remarks to receive an economic rather than a political application.

"I shall confine my reference to San Francisco as a manufacturing center, and, in my relation to the city as such, I think I may be regarded as a San Franciscan. My interest here is very large, and I became so worried over it that I came out here to make a long stay. I did not come with the intention of making money, but with the intention of saving the loss of money. The first thing I encountered was the labor situation. Manufacturing can be successful only where labor conditions are normal. This city's ability to compete with other American cities rests on its ability to provide labor at a normal cost and free from restrictions.

"England's supremacy in manufacturing has been lost through the discovery that one man in Pittsburg does four times the amount of work as a man in Birmingham. We can afford to pay a man in Pittsburg twice the wages that we can afford to pay a

man in Birmingham. For that reason Pittsburg retains its manufacturing supremacy.

"I am not opposed to the principle of organized labor, but I am opposed to unionism as it is practiced today. I am equally opposed to the manufacturers who treat their men as many of them do. I believe in high wages, but I believe in a fair day's work in return for those wages.

"I probably employ more men than any other single employer in this country, but I employ no union men, for the reason that their work is restricted by their organizations. I have told this to Mr. Mitchell and Mr. Gompers and the other great labor leaders of the east. I will pay more to non-union men who are at liberty to do a day's work than I will to union men who work under restrictions. No trust nor labor union can succeed that practices restrictions. When a trust restricts its output and depends for success on such a policy, it is foredoomed to failure. The labor of the members of a union represents its output, and when this is restricted by rules and regulations it is equally foredoomed to failure. Those functions of a labor organization that are fraternal are legitimate and have my indorsement, but those that are restrictive must certainly lead to its undoing.

"I have been spending a few days here in consultation with Mr. McGregor, the president of the Union Iron Works, and, after giving everything careful consideration, I have made up my mind that we at the Union Iron Works will proceed with our work stronger than ever before. And I have come to this determination because I believe that San Francisco has a great future. San Francisco is the commercial metropolis of this coast, as New York is of the Atlantic coast, and with trade gradually but certainly shifting from the Atlantic to the Pacific, she is bound to become one of the greatest commercial centers of the world. With its splendid climate, its splendid location and its splendid advantages for communication between the east and the west, it will certainly overcome the difficulties that are confronting it now.

CONDITIONS ARE ABNORMAL.

"We do not expect to make any money at present, but we do not expect to lose much, and when conditions right themselves we shall make

"We in the east draw the impression that San Francisco is in a state of political turmoil; that its courts of justice are in the hands of factions; that internal strife is rife among your own people. Let me assure you that the business confidence of other American cities in the business integrity of your city is worth much to you. Let me beg you to drop once and for all this internal political strife that is destroying faith in you abroad. Do your best to disentangle yourself from these things, and you will find that quickly the hand of good-fellowship will be extended to you. Let us put our hands together and work to build up and make of this gem city on the shore of the greatest of our oceans a reality surpassing the dreams and the plans of earlier years. Have your courts so that every man can feel that, be he poor or rich, he will be honestly treated there. It is imperative that you regain and retain the confidence of every man who wants to invest his money here. Do that and San Francisco will soon be the booming city of other days."

The United States training ship, Intrepid, which was recently completed at the Mare Island navy yard, has just been placed in commission at the training quarters, located on Yerba Buena ("Goat") Island, near San Francisco. More than three years have elapsed since the laying of the keel at Mare Island. The long delay was due to the exhaustion of the appropriation specially set apart for the construction and equipment of the Intrepid, and also to industrial troubles.

She is bark-rigged, and carries an armament of six 4-in. guns, and four



6-pounders. Sails alone furnish the propulsive power. The hull is of handsome design, the lines being very graceful and symmetrical. The Intrepid is only the second sailing vessel used as a training ship in the United States navy. Orders were given to construct the two training vessels by the navy department at the same time. The one to be used on the Atlantic was completed and placed in active commission about a year ago. The old Independence and Pensacola are the only training vessels now on the Pacific besides the Intrepid.

A United States district judge recently expressed the opinion privately that inasmuch as various governments had adopted submarine signals as an aid to navigation, no vessel could be held excusable for not being equipped to receive such signals, in case of accident which could have been prevented had the vessel been so equipped.

The Shamrock Shipping Co., of Larne Harbour, County Antrim, Ireland, have equipped their steamship Moyle to receive submarine signals.

The Trelleborg Lightship, which protects the harbor of Malmo, Sweden, is being fitted with a submarine bell, and the steamship Prinzessin Margarita and Prinz Gustav Adolph are being equipped to receive submarine signals.

The pilot boat Vlissingen, belonging to the Netherlands royal minister of marine and stationed at Flushing, has been equipped to receive submarine signals.

The Royal Sovereign Lightship, stationed off Eastbourne, in the English Channel, has been equipped to send submarine signals. Due notice of beginning to send such signals will be given officially by the British authorities.

The pilot boat Williamshaven, at the port of the same name in Germany, has been equipped to receive submarine signals.

The new steamer Rochester will be commanded by Capt. Robert Murry now in command of the steamer Troy of the Western Transit line. The Rochester will go into commission about Nov. 10. Frank Miller, chief engineer of the steamer Duluth will be chief engineer of the Rochester, and Joseph Foster, first assistant engineer of the Troy will be promoted to the position of chief engineer on that steamer, while Fred Hall, formerly chief engineer on the Troy, will become chief engineer of the Duluth.

COLLIER EVERETT IN COMMISSION.

Quincy, Mass., Oct. 23.—The new collier Everett built for the Massachusetts Steamship Co., by the Fore River Ship Building Co. of Quincy, left yesterday afternoon for Baltimore on her first charter. Previous to sailing a party of friends were taken for a trip down the bay as the guests of President James L. Richards of the New England Gas & Coke Co. in the service of which company this ship and the colliers Melrose and Malden will be employed.

The party included some of the biggest men in Boston interested in the coal trade and in transportation and the speeches made were of great interest to ship builders, ship owners and men engaged in land and water transportation, the statement of Vice President Byrnes of the New York, New Haven & Hartford Railroad Co., as to the possibility of his company's engaging in the ocean carrying trade being most significant.

It was the opinion of the coal men that the solution of the problem of providing a regular, steady supply of coal for Boston, removing the delays, demurrage and other such expenses incident to the use of sailing tonnage, had been solved by the Everett.

All expressed their satisfaction with the vessel, which is the largest and fastest ship of her class under the American flag. Her significance as an addition to the American mercantile marine and the bearing which this and the two sister ships have on the great problem of transporting coal to Boston was most instructively discussed at the luncheon which was served in the saloon of the Everett.

President James L. Richards presided and said in his remarks that he as the head of a public service corporation felt that the interests of his company and the interests of the people he served were identical. Therefore anything which helped toward improving that service was of public importance. He spoke of the building of the Everett and the other two vessels and dwelt upon the change in method of transporting coal to Boston which these vessels would bring about.

He then introduced President Bowles of the Fore River Ship Building Co., who said that his company had studied the question of ocean transportation of coal and had been able to present the situation to those engaged in the business in a manner which had brought about the building of the Everett. His company, he said,

had turned out eight vessels engaged in the carrying of freight on the Atlantic coast, and he believed that the success that had attended these ships plainly showed that they had but scratched the surface of the possibilities of this traffic. He thought that the record of these vessels and the things which were confidently predicted for the Everett and her sister ships, indicated very clearly what could be done by vessels of modern type and design in the transportation of freight by water on our coasts.

He was followed by Vice President Byrnes of the N. Y., N. H. & H. R. Co., who expressed the opinion that these vessels would work an important change in the carrying of coal into Boston. He said that the thanks of the people of New England were due to President Richards and his associates for the building of these vessels for the service intended, and, continuing, he discussed the question of transportation as it affected New England, saying, among other things, that notwithstanding the geographical handicap under which New England labors there was no place in the country where the chance for business development was so great. The difficulty of supplying New England with fuel, he said, was a great one, and he believed that the construction of ships like this was a solution of the problem. With modern terminals and modern vessels there ought to be a great reduction in the cost of carrying coal. He referred to the inadequacy of the present system of supplying coal to Boston and said that unless the great coal companies here should grasp the situation and change the existing condition of affairs that he believed it to be the duty of the New York, New Haven & Hartford Railroad Co. to go into the ocean carrying trade. Unless the New England manufacturers can get their raw material and fuel brought to them at a low price he believed the New England manufacturer could not keep up the competition with other parts of the country. If he could dictate the policy of his company, he said, he would bring coal, cotton and raw material to New England without profit to the carrier and would make his profit in carrying away the finished product. He thought that the building of this fleet of vessels was an evidence and a most striking one that the men of New England are aware of conditions, are up to date and are prepared to take the necessary steps to relieve and change radically present methods of transportation.

Mr. Frank Barr, vice president of the Boston & Maine R. R., told of the plans of that company for additional track facilities at the Everett terminal of the New England Gas & Coke Co., which will be made necessary when these three colliers begin their regular service of bringing coal up the Mystic river from the Chesapeake ports. His company had arranged for two additional tracks through Everett and for additional trackage in the gas plant at Everett and on the property of the Boston & Maine just outside for the accommodation of about 1,000 cars. It was the plan of the Boston & Maine R. R. Co. to run trains from Everett direct to such places as Lowell, Lawrence and Manchester, and the empty cars could be returned by the way of Peabody and Salem direct to the yard, which arrangement would mean a great saving in time of the transporting of coal from Everett to the points about Boston and to the New England cities nearby.

Mr. Eugene Nelson of the Metropolitan Coal Co. was called upon by President Richards to tell something of the loss in demurrage and other charges which are incurred under the present system of transporting coal. Mr. Nelson said that in 20 years he had seen great changes in coal transportation. When a steam collier of a cargo capacity of 2000 tons was built there were prophecies of failure, but for himself he believed that the time was not far distant when colliers of a cargo of 10,000 tons would be built. He told of the delay caused by transporting coal by sailing vessels and by barges in tow. Sometimes there would be 50 sail vessels tied up in Vineyard Sound waiting for fair weather so they could come around Cape Cod and get into Boston with their cargo. When this large number of vessels got into the harbor there were not sufficient docking facilities to handle them. The ships that got in first were taken into the dock and unloaded, but the others had to lie out in the stream with demurrage and other expenses running on day after day. This sailing tonnage also crippled the railroads. When a big fleet of vessels dumped 50,000 tons of coal into Boston the railroads were unable to furnish a sufficient number of cars to handle it all, where if the supply of coal had been regular and steadily distributed over 300 working days the railroads would be able to handle it without difficulty. Large, powerful and serviceable colliers like the Everett, he thought, would bring about this condition of

affairs, which would mean so much to all who dealt in coal and to all who consumed it.

Capt. Peter Frostead, commander of the Everett, made brief remarks in which he expressed the hope that he would be able to do all that the owners expected while he had charge of the ship, and remarks were made also by Vice President Finn, Mr. Skentelbery, and by Mr. George Simpson, chief draftsman of the Fore River Ship Building Co., and others.

The Everett came up the bay as far as Deer Island Light, where the guests were transferred to the tug and then, with a parting salute of her siren, the Everett put to sea, bound for Baltimore, where she is expected to arrive on Friday afternoon. She is chartered by the Davis Coal & Coke Co. of West Virginia and will take on her cargo at the terminals of that company at the Port Covington docks, Baltimore. The collier Malden, which will be put in commission in about a month, will be chartered by the Metropolitan Coal Co. of Boston.

The company on board the Everett included President James L. Richards, Vice President G. H. Finn, Treasurer Robert Grant, and Marine Superintendent Charles Skentelbery of the Massachusetts Steamship Co.; President F. T. Bowles, of the Fore River Ship Building Co.; Vice President Byrnes, of the New York, New Haven & Hartford R. R. Co.; Vice President Barr, of the Boston & Maine R. R.; Mr. E. Kelly Rothstein, of Baltimore, vice president and general manager of sales of the Davis Coal & Coke Co.; Mr. Eugene Nelson and W. S. Winslow, of the Metropolitan Coal Co.; Mr. W. B. Donham, vice president of the Old Colony Trust Co.; Mr. S. T. Frothingham, of the Submarine Signal Co.; Mr. H. H. Stinson, Capt. W. F. Humphrey, Mr. H. S. Mann, Mr. D. D. Morss, secretary of the Boston chamber of commerce; Mr. F. Tudor, Mr. W. M. Marvin, Mr. Henry Lyons, Capt. W. M. Smith, and Capt. Alfred Abbott, who will command the colliers Malden and Melrose when they go into commission; Mr. James Middleton, Mr. Linden Stuart, Mr. George Simpson, Mr. R. D. Willard, Mr. B. J. O'Toole, and Mr. L. H. Peters, foreign freight agent of the Boston & Albany R. R.

On board the Everett in addition to the ship's company were Marine Superintendent Skentelbery, Engineer James Middleton and Superintendent of Hull Construction Linden Stuart, of the Massachusetts Steamship Co., and Charles Lincoln, of the engineer

force of the Fore River Ship Building Co., and Capts. W. M. Smith and A. Abbott, who will command the Malden and Melrose.

The formal transfer of the Everett to her owners took place at Fore River on Monday. President F. T. Bowles and General Manager H. G. Smith represented the Fore River Ship Building Co., and Vice President and General Manager G. H. Finn and Marine Superintendent Charles Skentelbery the Massachusetts Steamship Co.

A MOTOR DRIVEN LINER.

There is now under way in England an experiment which, if successful, will mark a new step in marine propulsion and achieve results by which the Lusitania's speed record will be put in the shade. The keynote of the idea is the application of electricity to turbines, and a well-known firm of engineers is equipping a vessel with an apparatus designed to make the test both practical and complete.

It must be remembered that the steam turbine is most efficient when running at high speed, while a ship's propeller, on the other hand, will not work efficiently at the highest speed. If the speed be increased beyond a certain point, far below the most efficient speed of the turbine, the blades of the propeller simply churn the water instead of driving the ship. It is impossible to gear down from a turbine to a propeller shaft, for the horsepower of marine turbines is too great for any practicable form of gearing. Consequently the turbine has to be run slowly, and an inevitable loss of efficiency in this direction is put up with.

The speed of the Lusitania's turbines is only 180 revolutions per minute, and to adapt them to these conditions they are large in diameter and have blades of great sectional area. This means that there must be sparse clearances, and these in turn mean that steam entering the turbines at high pressure finds its way toward the condenser without giving out the whole of its heat and energy. If brought to perfection electrical transmission will form a link between the swift turbine and the slow propeller.

The plan upon which the firm of engineers which is now preparing to make the practical test spoken of is not that the turbine should be coupled directly to the propeller shaft, as is now done, but should drive high-speed electrical generators and supply current to electrical motors for

driving the propellers. A qualified engineer further explains the idea as follows:

"For fast passenger boats the arrangement will resemble that of a modern electricity supply station with the many units of the plant feeding the common system of mains. All the turbo-generators will supply the common bus-bars on the switchboard, so that it will be possible to feed any motor from any generator. The system of supply adopted will be either continuous or alternating, preferably the latter, as high pressures can be used and commutation troubles avoided. Some alteration in the disposal of the machinery would be necessary, but on the whole there would be a gain of space. But more important than any consideration of space, the electrical system possesses the advantage that the motors can be reversed almost immediately."

A future Lusitania may be driven by turbo-generators of 100,000 H. P. at a speed of 30 knots. Such a vessel would have six turbo-generators of 20,000 H. P. each, one of which would be in reserve. Each of her four propellers and the shafts would be provided with six motors of 5,000 H. P., five of which would do the work while the other would be a standby, running light but ready on the pressure of a button on the bridge to take up its share of duty.

For the bridge electrical transmission will mean a revolution, the navigating officer will no longer have to signal his orders for the maneuvering of the ship to the engine room. He will have beside him a keyboard of push buttons by which he himself will control every movement of the ship instead of ordering the engineers. To go astern, for example, he will push a button which will reverse the motors, and so with every variation of speed and direction.

Such an accident as occurred to the Deutschland in Dover Harbor would be impossible. The eye that sees the danger and the hand that prevents disaster will be controlled by one brain, and the navigating officer on the bridge, conscious of imminent peril, will not have to transmit mechanically his orders to the unseen engine room below, where their immediate performance, on which the vessel's safety depends, may be hindered by slow comprehension or an accident of some other nature.

In the electrically-propelled ship, the eye that sees and the brain that understands will alike control the propeller and the helm.

NAVAL ARCHITECTS AND MARINE ENGINEERS.

The fifteenth general meeting of the Society of Naval Architects and Marine Engineers will be held in the Engineering Societies building, New York, on Thursday and Friday, Nov. 21 and 22. The sessions will close with the customary banquet at Delmonico's on Friday evening. The program this year is of especial interest and is as follows:

THURSDAY, NOV. 21.

"An Experimental Investigation of Stream Lines Around Ships' Models." By Naval Constructor D. W. Taylor, U. S. N., vice president.

"Some Experiments Upon the Effect of Longitudinal Distribution of Displacement." By Prof. H. C. Sadler, member.

"Further Tactical Consideration of Warship Design." By Com. A. P. Niblack, U. S. N., member of council.

"Submarines of Battleship Speed." By Mason S. Chase, member.

"Motor Boats for Naval Service." By Naval Constructor L. S. Adams, U. S. N., member.

"High Speed Motor Boats for Pleasure Use." By H. R. Sutphen, associate.

"Some Observations on Motor Propelled Vessels and Notes on the Bermuda Race." By W. B. Stearns, member.

FRIDAY, NOV. 22.

"Two New Revenue Cutters for Special Purposes." By Capt. C. A. McAllister, U. S. R. C. S., member.

"Tests on the Steamship Governor Cobb." By Prof. W. S. Leland, member.

"Appliances for Manipulating Lifeboats on Sea-going Vessels." By Axel Welin, member.

"The Transportation of Refrigerated Meat to Panama." By Roland Allwork, member.

"Two Instances of Unusual Repairs to Vessels." By Assistant Naval Constructor W. B. Ferguson, U. S. N., associate.

"Wooden Sailing Vessels (with particular reference to those built previous to the Civil War)." By B. B. Crowninshield, member.

"Some Early History Regarding the Double-Turreted Monitors Miantonomah and Class." By W. T. Powell, member.

THE MAURETANIA'S SPEED.

An interesting statement regarding the speed of the new Cunard liner Mauretania appears in the latest issue of the *Shipbuilder*.

The editor of that quarterly journal is on the staff of the Wallsend

ship yard, and presumably has inside information, which is no doubt all the more reliable in that he uses it very guardedly in print. He says:

"Though I possess no official information, I have reason to believe that on the measured mile at St. Abb's Head she averaged something very nearly approaching 26 knots. Neither engines nor boilers were pressed to their fullest capacity, and it must be borne in mind that this speed was attained after the vessel had been lying a full year in the Tyne without dry docking. That she will do considerably better after docking and cleaning goes without saying, and it seems certain that in the Mauretania the Cunard company will obtain a vessel capable of maintaining a speed considerably in excess of the contract requirements."

This entirely confirms the statements already made in these columns. Indeed, it is now freely stated on Tyneside that the Mauretania on her best run did within an ace of 27 knots, so that it is quite possible that "she averaged something very nearly approaching 26 knots."

SFENDONI'S TRIAL.

The official full-speed trial of the torpedo boat destroyer Sfendoni (Sling), built for the Greek government by Messrs. Yarrow & Co., of Poplar and Glasgow, took place on Wednesday, Oct. 16, in the estuary of the Thames, in very rough weather, when a mean speed, carrying a load of 61 tons, of 31.825 knots was obtained over the measured mile, and 31.847 knots during a continuous run of three hours. The air pressure in the stoke holds was 2 in., and the mean revolutions, 409 per minute. The Greek navy was represented by Capt. J. Hepites, the chief of the commission; N. Leondopoulos, naval constructor; N. Sofikitis, and J. Carpetopoulos, engineers. During a previous coal consumption trial of eight hours at a cruising speed of 14 knots, 35.8 knots, were run to the ton of coal burned, giving a radius of action at this speed of 3,150 knots. The Sfendoni is the fourth vessel of this type built by Messrs. Yarrow for the Greek government. The dimensions are: Length, 220 ft.; breadth, 20½ ft.; and depth, 12 ft. 4 in.

The St. Lawrence Marine Railway Co., Ogdensburg, N. Y., now have their new railway in operation, enabling them to repair any vessel that can navigate the Canadian canals.

NAVAL PROGRAM.

Representative Lilley, of Connecticut, who is a member of the committee on naval affairs, and who is opposed to the sending of the battleship fleet to the Pacific, has had several conferences with Secretary of the Navy Metcalf and Rear Admiral Brownson, chief of the bureau of navigation, in regard to the building program and the effect the fleet's cruise may have upon it. Mr. Lilley is believed to hold the opinion that if the Pacific cruise results in the permanent placing of the battleships on that station, congress would favor a heavy increase of the navy. Secretary Metcalf and Admiral Brownson both favor the general board's building program of four large battleships, five fast cruisers for scouting, and a sufficient number of colliers, but Admiral Brownson doubts the advisability of asking for so many ships at one time.

NEED OF SUBMARINES.

Vice Admiral Galster of the German navy is the author of a recently published pamphlet in which he puts forth the argument that the need of the German navy is not the hurriedly increasing number of battleships and large cruisers, but the development of the means of carrying on guerrilla warfare with submarine boats, torpedo boats and small and swift cruisers. In the course of the essay he advocates the building of sixty submarines. He argues that in the event of war cruisers should be stationed at German colonial ports—which must be heavily fortified—in order to break Great Britain's communications with her colonies, and the use of floating mines would have to be resorted to extensively in order to render the blockade of German ports ineffectual.

Capt. Mark Campbell, of the steamship Afghan Prince, of the Prince line, was recently honored by the presentation to him of a watch and chain by the Czar of Russia, in consideration of his kindness to 2,800 Russian soldiers who were conveyed from Vladivostock to Odessa after the Russo-Japanese war, in the captain's vessel. This is the second time that Captain Campbell has received a mark of imperial favor, he having had a gold watch and chain presented to him in 1889 by the Emperor of Germany in recognition of his bravery in rescuing the crew of the brig Sirius on the Atlantic.



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INTEREST CONNECTED OR ASSO-
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October 31, 1907.

NATIONAL RIVERS AND HAR- BORS CONGRESS.

The annual convention of the National Rivers and Harbors Congress will be held at the New Willard Hotel, Washington, on Wednesday, Thursday and Friday, Dec. 4, 5, and 6. This organization is not to be confused with the Rivers and Harbors Committee, as it is a citizens' organization purely, though Congressman Joseph D. Ransdell, a member of the Rivers and Harbors Committee, is president of it. This congress does not advocate any special project for river and harbor improvement but stands for a broad and liberal policy by the national government for all such improvements as

can be favorably passed upon by the board of United States engineers. This convention will demand of the congress of the United States that a more liberal portion of the revenue of the government be expended in improving the natural channels of trade and transportation. Obviously all revenues of the government are derived from commerce and yet only about three per cent is expended upon improving the natural channels of transportation.

The National Rivers and Harbors Congress believes that the country is big enough to justify an annual appropriation of \$50,000,000 for the improvement of our inland waterways.

SHIP BUILDING IN CANADA.

The fact that some of the Canadian ship yards on the great lakes have been compelled to lay off a lot of men because no orders for new ships are forthcoming superinduces some sober reflections. During the present year 10 new ships for the Canadian lake trade have been built in Great Britain, but not a single one contracted for in a Canadian yard, although there are good facilities in Canadian yards for the output of tonnage. There is a ship building bounty of about one-fifth the difference between the cost of a British-built and Canadian-built steel ship, in addition to which the Canadian yard capable of constructing a steel ship is allowed a fixed bounty in proportion to the cost of the plant. Canada, however, is hampered in the construction of the steel ship by the necessity of paying duty on any parts of the ship that may be imported, while the whole ship itself can come in duty free, if she carries the British flag. Recently some ships too long for the St. Lawrence canals have been brought over from Britain, cut in two at Quebec and put together again at a United States port. Two of these ships are for the Canadian Pacific Railway, a company that has very largely enjoyed the patronage of the Canadian government in the way of subsidies. There is perfect freedom for any small British tramp steamer to enter the Can-

adian coastwise trade on the lakes and interfere with the Canadian-built ship. It is evident that Canadian ship building will not prosper until the Canadian government exercises over its coastwise shipping a similar protection to that which is enjoyed on the American side of the lakes. As long as a British steamer may be entered free it would seem only reasonable that the parts of a ship intended for construction in a Canadian yard should also be entered free. The Dominion government should make an inquiry into the state of its shipyards and at least give them a fair chance to become profitable enterprises. Ship yards are a national necessity and any artificial handicaps which make their operation difficult should be removed.

REPORT OF INLAND WATER- WAYS COMMISSION.

The report of the Inland Waterways Commission, which will be made to the president about the last of November, it is believed, will recommend the adoption by congress of a most comprehensive scheme for the improvement of the inland waterways of the country which has ever been proposed, involving the expenditure of more than \$200,000,000. The commission's special committee, composed of Gifford Pinchot, of the forestry bureau; F. H. Newell, of the reclamation service, and W. J. McGee, of the department of agriculture, are now at work preparing the report. Two great projects, one for the development of the Mississippi river, and the lakes-to-the-gulf deep waterway, and the other for the development of a deep water inland route from Massachusetts Bay to Peaufort, N. C., are the principal undertakings favored by the commission.

SOUTH CHICAGO YARD ABAN- DONED.

As a result of the difficulties which the American Ship Building Co. has encountered with labor in the operation of its South Chicago yard, President James C. Wallace announced this week that the yard would be abandoned insofar as new construc-

tion is concerned. The steamer W. A. Hawgood is therefore the last one that will be built at this yard for some time. Arrangements have already been made for stripping the plant and the machinery will be distributed among the other yards. The yard will still be used for repair work but with a much diminished force. The necessity which impels the company to this end is greatly to be regretted, as the yard usually employs about 1,800 men.

LAKE LAUNCHINGS.

The steel steamer Collingwood, building for the Farrar Transportation Co. of Collingwood, was launched from the yard of the Collingwood Ship Building Co., Collingwood, Ont., Wednesday afternoon, Oct. 30. She is of the single deck bulk freight type, built on the arch and web frame system without hold beams or stanchions. The spar deck is continuous all fore and aft with raised top gallant forecastle with pilothouse and texas on same and deckhouse aft, containing coal bunkers, boiler house, galley, two dining-rooms and crew's quarters. Accommodation for such part of the crew as is not housed in the after deck house is provided in the forecastle and in the upper boiler house and on the fantail aft.

The new steamer is 406 ft. long, 50 ft. beam and 28 ft. deep. She has 11 hatches spaced 24 ft. centers and 10 ft. long fore and aft. Her engines are triple-expansion with cylinders 21, 23, 33½ and 57 in. diameter by 42-in. stroke, supplied with steam from two Scotch boilers, 14 ft. in diameter by 12 ft. long over heads, allowed a working pressure of 180 lbs.

Marine men who have inspected this new steamer consider her one of the best built and best equipped on the lakes. The design drawing and specifications of this vessel were drawn up by H. N. Herriman of the Great Lakes Register. It is expected that the Collingwood will leave on her initial trip on Saturday, Nov. 9, for a cargo of wheat from Fort Williams to Georgian Bay ports.

The steamer Charles W. Kotcher, building for the Detroit Steamship Co., was dropped overboard at the Lorain yard of the American Ship Building Co. on Saturday. Miss Alice Kotcher, of Detroit, daughter of the man for whom the boat was named, christened the steamer. A large number of Detroiters witnessed the launching. After the launch the party took luncheon at the Clifton Club, Cleveland, and returned to Detroit on

the D. & C. steamer in the evening.

The Kotcher is 440 ft. over all, 420 ft. keel, 52 ft. beam and 26 ft. deep. She will have triple-expansion engines and Scotch boilers and will be ready to go into commission in about three weeks. Capt. Wm. H. Hoffman, who was for a number of years in the Cleveland-Cliffs fleet, will be master of the Kotcher, and Thomas Purvis, who was in the steamer Majestic when she burned some time ago on Lake Erie, will be chief engineer of the Kotcher.

The steamer Elba, the last of the eight vessels ordered by the Lackawanna Steamship Co., was launched at the Cleveland yard of the American Ship Building Co. last Saturday, and was christened by Mrs. Irving S. Fenn, wife of the assistant purchasing agent of the ship building company. The Elba is 440 ft. over all, 420 ft. keel, 52 ft. beam and 28 ft. deep. She will have triple-expansion engines and Scotch boilers. The steamer will be completed about Nov. 20.

OVERHAULING WHEEL CHAINS.

Editor MARINE REVIEW:—I was greatly interested in the communication on the necessity of overhauling wheel chains from Capt. George F. Coles, of Collingwood, Ont., published in the issue of Oct. 24. I heartily concur in everything that Captain Coles says in this communication. It is a practice which this office has observed for the past seven years with most beneficial results. One of our rules for the navigation of our ships reads as follows:

"It shall be the duty of the mates to go over the steering gear and wheel chains prior to leaving port each trip, making an entry on the log of the time and date of inspection with a statement of the condition."

The log of our steamers immediately upon reaching the office is examined for this particular information. Obviously the mate will make no false entries in the log and that this duty is most rigidly attended to is proved by the fact that we have had during the past seven years only one case in which anything has happened to the wheel chains of our vessels. Prior to the enforcement of this rule we had about seven accidents caused by wheel chains per annum. Our experience proves conclusively that the number of accidents on the lakes could be minimized by paying more attention to this highly important subject.

OWNER.

Cleveland, Oct. 26.

LIGHTER RELIANCE.

The lighter Reliance of the Great Lakes Towing Co.'s fleet in tow of the Harding arrived in Cleveland on Tuesday en route from Buffalo. The Reliance will be stationed in the lower Detroit river for the balance of the season.

The Reliance is constructed entirely of steel and is 250 ft. long, 40 ft. beam and 9 ft. deep, with a cargo capacity of 3,000 tons. She is an extremely serviceable and capacious craft, having 12 hatches spaced 16 ft. centers, 19 ft. in the clear and 14 ft. fore and aft. All the hatches are commanded by a traveling derrick running on four wheels on a 21 ft. 9 in. gage of track. The derrick is equipped with an independent engine for swinging of the reverse throttle type with cylinders 9 in. by 9 in., and a traveling engine of the same type. The main hoisting engine is of the G. H. Williams type, with drums 30 in. diameter with automatic holding drum for clamshell bucket work using a Williams 3-ton Faivrette clamshell bucket. The derrick is entirely of steel with a 65 ft. boom. The machine will travel along the deck, swing, hold the load or lower it, or reverse any of these operations at the same time. The derrick was supplied by the G. H. Williams Co. of Cleveland.

The lighter is supplied with two mooring engines of the Chase type and a Lang patent single cylinder steering engine. The steering engine, as well as the traveling and swinging engines, were supplied by the Chase Machine Co. of Cleveland. The Lang steering engine, manufactured by the Chase Co., is a new invention, and the one installed on the Reliance is the first to be put in practical service.

FREIGHT SITUATION.

There is practically little change in the freight situation, the ore movement being heavy, the coal movement light, and the grain fleet crippled by the shortage of cars at Buffalo and the consequent straining of elevator capacity. Owners are somewhat reluctant to take grain cargoes for Buffalo owing to the fact that they cannot be unloaded without a serious delay there. The grain trade is on the whole disappointing.

Capt. Donald Rosie of Grand Haven, Mich., died suddenly in his home there last week of heart failure. He was an old-time captain and had lived in Grand Haven for half a century.

A TRIP UP THE LAKES.



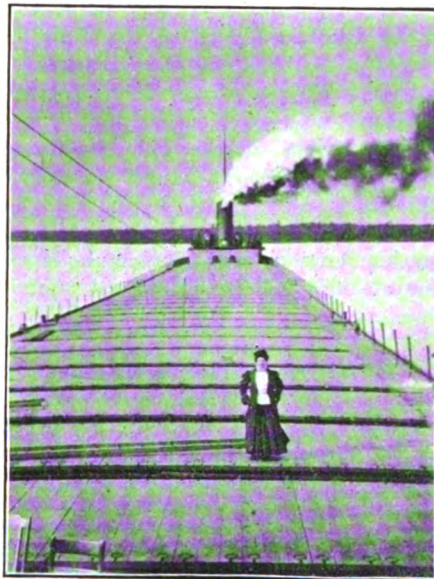
FORTUNE of a rare kind favored the writer recently with a trip up the lakes on the bulk freighter J. H. Sheadle. The phrase "In all the world no trip like this," originated by the Great Northern Steamship Co., has become of world-wide fame. It is true in any event but doubly so when made on a freighter, owing to the com-

fort, freedom and privacy which one enjoys. The passenger accommodations of a lake freighter are necessarily limited, having rarely more than four staterooms and frequently not more than two. The latter is the case with the Sheadle. The extraordinary attractiveness of these trips has been well known in the lake region for many years though it is only within the past three or four years that attention has been paid to elegance in the design of the staterooms and private dining room. In these particulars the quarters of the Sheadle, while limited, are not excelled, the oak paneling being selected for the natural beauty of the wood.

As stated, the charm of these trips has been known in the lake region for many years but it has within the past year or two dawned upon the east that the lakes, in their great freighters, afforded a vacation outing of unusual advantage. These trips, however, are beginning to be appreciated so thoroughly by certain financial interests in the east, whose requests cannot well be ignored, that it is making it somewhat uncomfortable for the vessel owner. The freighter observes no schedule and sails from no regular port, which is something that eastern interests, unfamiliar with the business, cannot understand. It should be borne in mind, of course, that these trips are not a source of profit to the owners whose regular business is the transportation of ore and coal. They are affairs of invitation exclusively. But what with asking when the ship will be in, what port she will sail from, where she is going to and why she doesn't go somewhere else and what with multiplying this by the total number of vessels in the individual fleets it is no wonder that vessel owners believe it easier to move 1,000,000 tons of

ore than one unreasonable woman.

This particular trip on the Sheadle was taken during the time of the equinox when dirty weather might reasonably be expected, and in fact she did ride two storms, one of which sunk the Nimick, without appreciable discomfort. She is an especially seaworthy craft, being of unusually staunch construction. Her hatches are wooden, the Cleveland-Cliffs Iron Co. not believing that the steel telescopic kind is sufficiently perfected as yet, a view which would



THE SHEADLE BLEW A PASSING SIGNAL.

appear to be borne out in the fate of the Cyprus, though it is not readily understandable why the master of that vessel, if her hatches were leaking, did not head her into the sea. The Sheadle came across Lake Erie against a wild head sea and wind with her decks as dry as dust.

In general it was noted on the trip that passing signals were uniformly acknowledged, which was not regularly the case even as late as two years ago. In passing the Southeast shoal lightship in thick weather a practical demonstration was given of the efficiency of submarine sound signaling. The lightship was located by the sound signal at a distance of over two miles with great distinctness both as to sound and the direction from which it came. It is understood that the type of instrument installed on the Sheadle will be adopted by the Submarine Signal Co. for all future installations on lake steamers.

Capt. H. H. Parsons, master of the Sheadle, was born at Kingston, Ont.,

and began sailing as a boy in 1890 on the schooner Queen of the Lakes. He became an able seaman on the same vessel in 1891 and in 1892 was mate of the Queen of the Lakes. He was master of the schooner J. F. Card in 1895 and 1896 and of the schooner Porter in 1897 and 1898. He took the Porter to the Atlantic coast in 1898 and was caught in the great gale in which the passenger steamer Portland went down with three hundred passengers. The gale overtook the Porter while off the Nova Scotia coast. Captain Parsons did not abandon her until five days later when near the Georgia banks, commonly called the Gloucester Graveyard, it became clear that the Porter could not weather the gale. The crew was taken off by the fishing schooner Proytian, which had stood by about eight hours. The Porter shortly thereafter sunk.

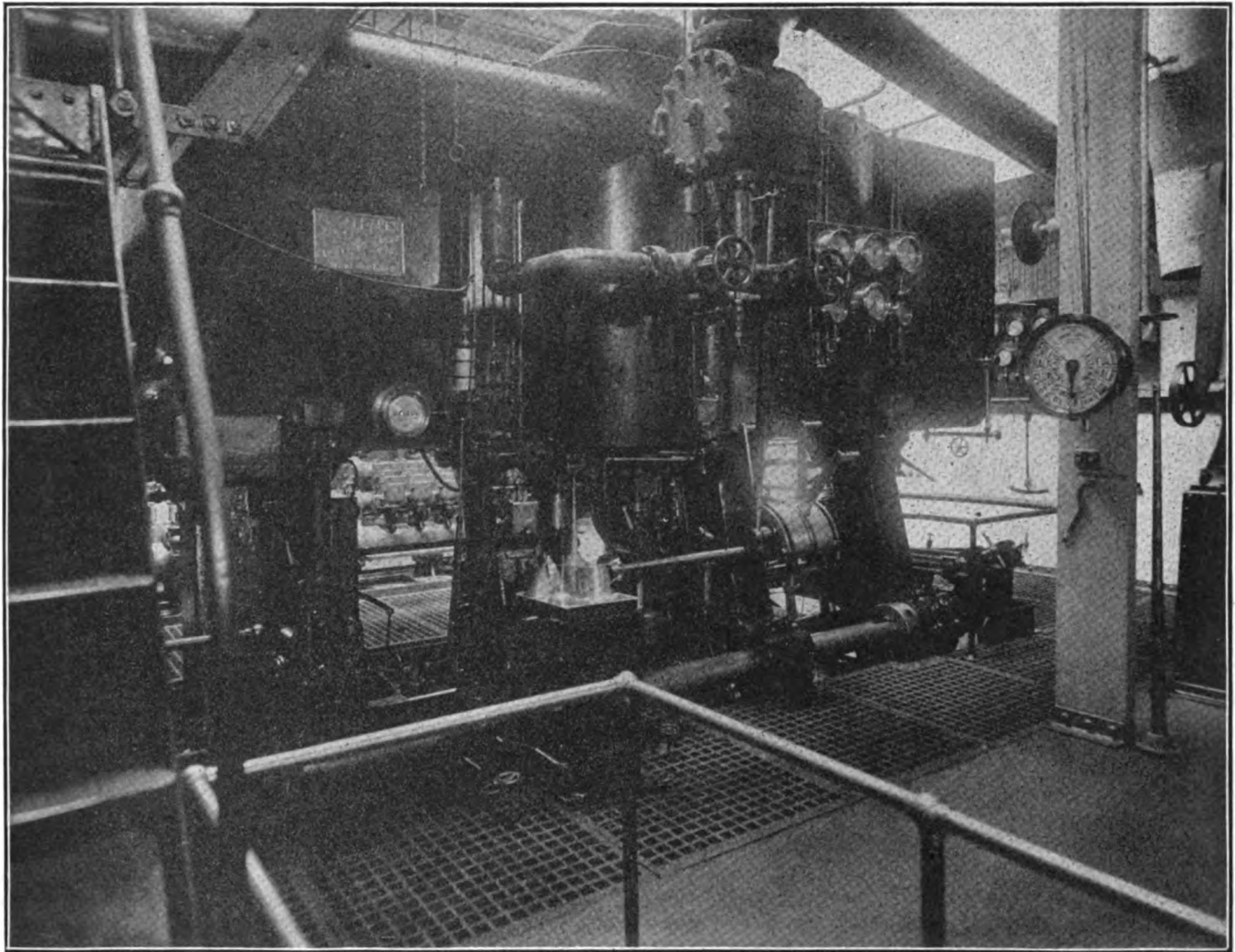
Captain Parsons' first steamer was the Swain, which he took out in 1899. He entered the service of the Cleveland Cliffs Iron Co. in 1900, sailing the Cadillac that year and the following year. He was in the Choctaw in 1902 and 1903, the Pontiac in 1904, Presque Isle in 1905, W. G. Mather in 1906 and J. H. Sheadle in 1907. During 1904 Captain Parsons was the grand president of the Ship Masters' Association.

Mr. C. H. Menmuir, chief engineer of the Sheadle, was born in Scotland and came to this country about twenty years ago. He received his



CAPT. H. H. PARSONS AND CHIEF ENGINEER C. H. MENMUIR.

preliminary training as an engineer in the engine works of Shank & Sons, at Arbroath. He started out as a lad aboard ship,



SHOWING THE UNUSUALLY TRIM APPEARANCE OF THE SHEADLE'S ENGINE ROOM.

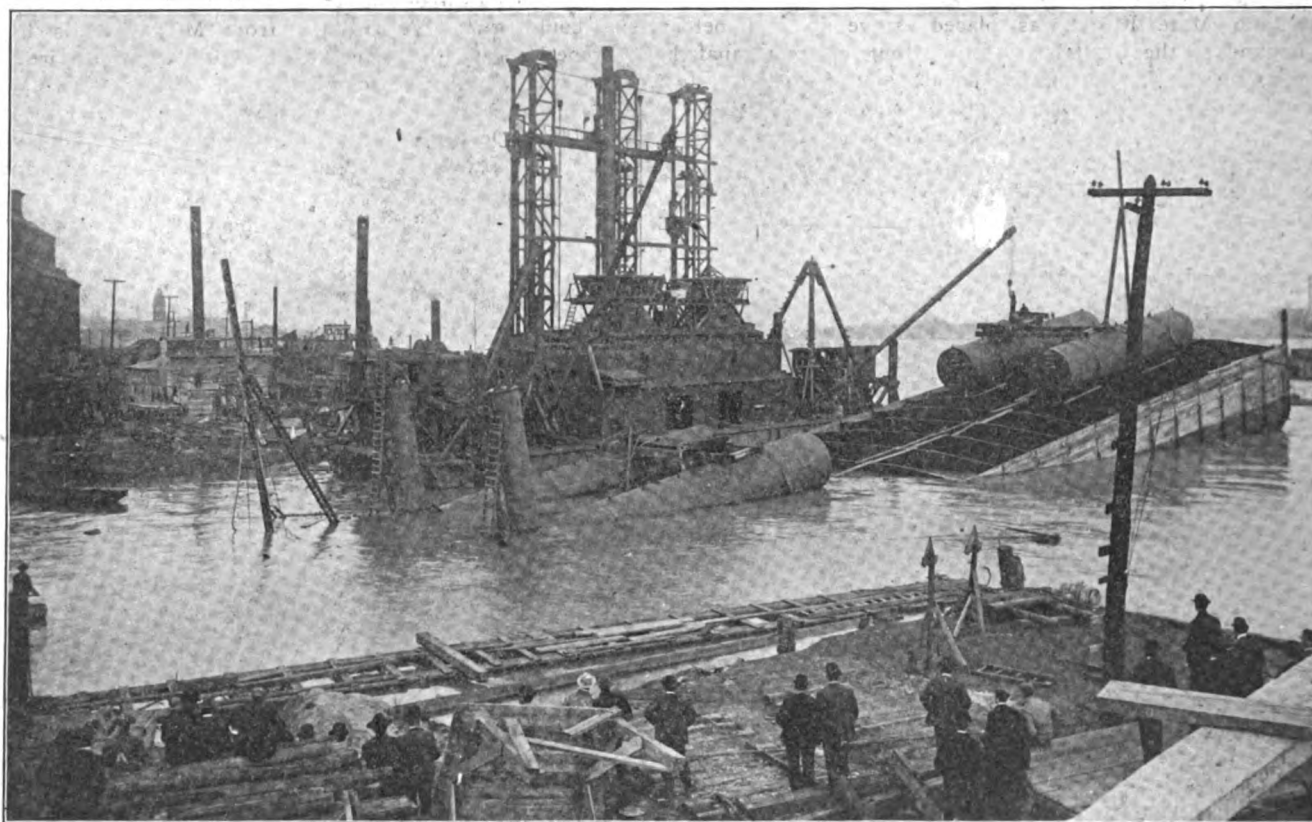
standing watch in the engine-room, on the whaler Aurora, Captain Fairweather, the cruise lasting about a year and going as far north as navigators usually go today. Mr. Menmuir regards this experience as a thing apart in his life, a story in itself. Captain Fairweather was an experienced arctic voyager and was associated with Commodore Schley in the relief of Greeley. After his arctic experience he served a year as apprentice engineer in the Gem line, Dundee, and then came to the United States. His first experience on the lakes was in the Detroit & Cleveland line, where he remained three years. He then became oiler in the steamer Samuel Mitchell, second engineer of the steamer Wm. Chisholm, then returning as second engineer to the Samuel Mitchell. He was chief engineer of several vessels in the Bradley fleet, notably the Morris Grover and George Stone. He then entered the service of the Cleveland Cliffs Iron Co. and has served

as chief of the Cadillac, Andaste, Angeline, Michigan, Ishpeming and Sheadle. One of the characteristics of Mr. Menmuir and doubtless the secret of his success is his power of organization. The discipline observed in the engine-room of the Sheadle is perfect. A good test of his executive ability is the fact that he is able to retain his fire hold force intact. Mr. Menmuir is endeavoring to introduce a book of discharges on the lakes. He thinks that such a system would contribute much to the development of a competent personnel in the engine-room. His idea is that every applicant shall have a book of discharges in which is noted his previous positions. This book he would deliver to the chief engineer, who would return it to him with proper notation when he desired to quit the service.

The assistant steward of the Sheadle was a very interesting young Englishman fresh from salt water, with which he might be said to be fairly dripping,

and filled with buoyant hopes of becoming a steward on the lakes. He had been steward on the Pola, a British ship that had not poked its nose into its home port for several years, but had bummed around the seven seas out of sight of land for months at a time, its latest trip being from Genoa, Italy, to Sidney, New South Wales. He had cooked for a crew of thirty-five men on this rolling, staggering and battered old tramp. Naturally, the galley of the Sheadle with its tile floors and complete equipment, accessible refrigerator and convenient pantry, impressed him greatly. "But, sir," said he in a simple, serious way, "you can't call this sailing, you know."

Capt. Parsons related a story of him. A couple of days after he shipped he saw the mooring lines being run out and stuck his head out of the galley with wonder. "I say, captain," said he, "are we getting into port again?"



SINKING THE FIRST SECTION OF THE MICHIGAN CENTRAL RAILROAD TUNNEL AT DETROIT.

DETROIT RIVER TUNNEL TUBES.

The tubes of the Detroit river tunnel constructed at the St. Clair yard of the Great Lakes Engineering Works certainly made one of the strangest looking cargoes that was ever floated down the St. Clair river. There are to be ten sections like that shown in the accompanying views, each section being 260 ft. long and each tube being 23 ft. 4 in. in diameter. They are to be laid on the bottom of the river and encased in cement. The subaqueous portion is 2,625 ft. in length, westerly of the open cut, 1,540.07 ft.; westerly approach, 2,128.97 ft.; easterly approach, 3,193.14 ft.; easterly open cut, 3,300 ft., making a total distance of excavation 12,786.18 ft., or a trifle more than 2.42 miles. The tunnel is building for the Michigan Central railroad.

AROUND THE GREAT LAKES.

The new tug Harding and lighter Rescue of the Great Lakes Towing Co.'s fleet will be stationed in the Detroit river for the balance of the season.

The main office and the chart department of the United States Lake Survey have removed from the Campau building, Detroit, to the old custom house.

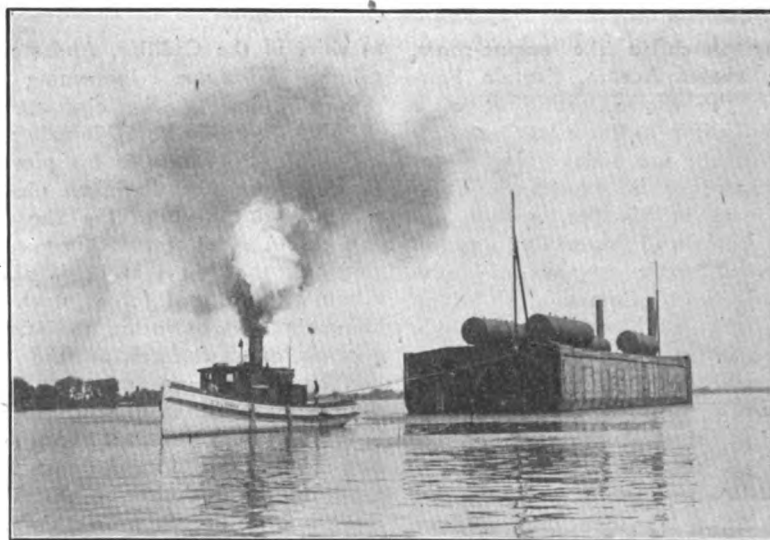
The steamer Olympia of the Gil-

christ fleet stranded on Grecian shoal, off Colchester, Lake Erie, Sunday night. She was released and proceeded up, uninjured.

Capt. John McLeod of Port Huron,

by Capt. H. S. Hackett of Marine City.

The steamer E. H. Gary struck the breakwater at Conneaut last Friday, displacing the pier head. The steam-



TOWING THE TUBES DOWN THE ST. CLAIR RIVER.

who has been sailing the sandsucker Ludington, has been appointed master of the steamer Bermuda to succeed Capt. Wm. Henderson, deceased.

The new steamer Arthur H. Hawgood left the Bay City shipyard on Monday morning last on her initial trip to Duluth. She is commanded

er was slightly damaged above the water line and stopped at the Ecorse ship yard for repairs.

Capt. George Balfour, master of the barge George H. Corliss of the Pittsburg Steamship Co.'s fleet, was compelled to leave the boat while at Conneaut on Tuesday, owing to ill

health, and Mate Kilby was placed in command of the Corliss.

James Coleman of Detroit has been appointed master of the steamer John Eddy to succeed George H. Lane, who takes command of the steamer Leland S. DeGraef, succeeding Thomas Derringer, who will bring out

stove in and before she could get out of the canal her forepeak was full of water. Her cargo was not damaged.

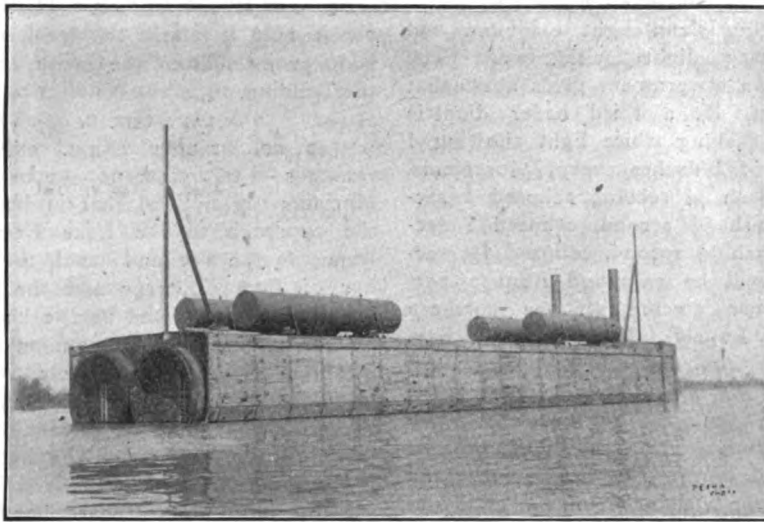
The steamboat inspectors at Detroit suspended the license of Capt. Martin O'Toole of the steamer Flora for 15 days and that of Capt. Daniel

A dispatch from Milwaukee is to the effect that 50,000 tons of iron ore, together with 70 ft. of the Thomas Furnace Co.'s dock, slid into the Kinnikinnick river late Sunday night. Had the accident occurred on a week day when the workmen employed on the dock were on duty, many would probably have been killed.

The steamer James C. Wallace was unloaded at the Lorain Steel Co., Lorain, O., in 6 hours and 24 minutes, using four 10-ton electric Hulett ore unloaders. Her cargo consisted of 10,092 gross tons of ore. Twenty-two men were used in the hold to clean up about 25 per cent of the ore. This is at the rate of more than 394 tons per machine per hour, averaging over the entire cargo.

The schooner Angus Smith of the Gilchrist fleet was found by the Lehigh Valley liner Wilkesbarre drifting about in a helpless condition off Buffalo and was towed back to Buffalo. The Smith was carrying coal and was in tow of the steamer John Eddy. The tow line parted several times in the heavy seas and the Eddy finally abandoned the schooner.

The steamer James Gayley, up-bound with coal, and the steamer Joseph Butler bound up light, collided in St. Clair river at Harsen's island, Saturday morning. The Gayley's port bow was badly damaged and her up-



ANOTHER VIEW OF THE TUBES.

the new steamer Josiah G. Munro.

The steamer William Edwards of the Richardson fleet, ran hard aground while going up the river at Racine and in trying to release herself broke her wheel. She was towed to the dock by a tug. Later she will be towed to Milwaukee where she will be docked for repairs.

After unsuccessful efforts to locate relatives of Frank Eisenbach, Thomas McCarty, Barney McConnell and one unknown deckhand, who lost their lives in the sinking of the steamer Cyprus on Lake Superior recently, the bodies were buried at Sault Ste. Marie on Wednesday of last week.

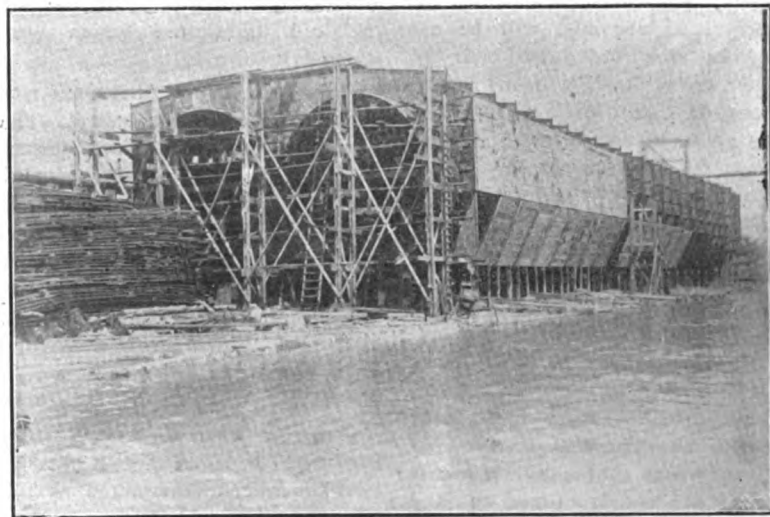
A dispatch from Detroit states that the upper deck of the new steamer City of Cleveland is almost completed and that the boat will be entirely housed in within a week or 10 days. Excellent progress is being made in rebuilding this steamer and she will be ready to go into commission next spring.

The board of managers of the Lumber Carriers' Association advanced freight rates 50 cents per 1,000 ft. on Tuesday of this week from all points. This makes the rate \$3 and from Georgian bay, \$2.50 free on the rail, and \$2.62½ when taken from dock.

The Canadian steamer Wahcondah of the Merchants' Line met with an accident near lock No. 2 in the Welland canal last week. Her stem was

McFarlan of the steamer McKerchey for five days for violating the pilot rules at the time of the collision between their vessels several months ago.

The Lake Carriers' Association has



THE TUBES ON THE STOCKS.

placed a white light on a red channel buoy stationed to the eastward and nearly abreast of the sunken steamer Moore near Mamajuda light, Detroit river. It will remain until the wreck is removed. The Reid Wrecking Co. is working on the sunken vessel in an attempt to raise her.

per works and shear strake were stove in a foot. The steamer lost her anchor, but was in a seaworthy condition and proceeded. The Butler was not damaged.

The steamer Cormorant of the Edward Hines Lumber Co.'s fleet was destroyed by fire on Lake Superior this week.

SAILOR'S LOG BOOK

LAKE MICHIGAN.

A number of changes have been made in the pier ranges at St. Joseph, east shore of Lake Michigan. These lights have been re-established, but without change in characteristic; the front light has been moved 8 ft. lakeward from its former position on the north pier. This light is now shown from a steel tower 31 ft. above lake level. The rear light of the range has its intensity changed and is much stronger than before; it is now a fourth order light. It has been moved 94 ft. lakeward and is shown from a steel tower 53 ft. high, the fog signal being located beneath it. The range has the same true bearing as of old, E x S $\frac{5}{8}$ S. The fog signal was formerly in the structure containing the front light. The olden wooden structures have been removed. The rear light was changed in order that it answer the double purpose of showing the harbor range and as a coast light. It was done to take the place of the bluff light, which was to have been discontinued, but as this procedure was so bitterly opposed the government has been prevailed upon to stay its order for the present at least.

On or about Oct. 23, a 10-inch steam fog whistle, which will sound 1 blast of 5 seconds duration every 30 seconds, thus, blast 5 seconds, silent interval 25 seconds, will be established on the outer end of the south pier at Holland (Black Lake), east shore of Lake Michigan.

STRAITS OF MACKINAC.—New Shoal gas buoy No. 3, moored in 26 ft. of water, on the NWly side of New Shoal No. 3, and about $2\frac{1}{4}$ miles NW $\frac{1}{4}$ N from Waugoshance lighthouse, reported extinguished, has been relighted.

LAKE HURON.

LAKE HURON — GEORGIAN BAY — PARRY SOUND APPROACH — SPRUCE ISLAND SHOAL — LIGHTHOUSE CONSTRUCTING — TEMPORARY LIGHT EXHIBITED.—The Canadian government gives notice that a lighthouse is in course of construction on the southern extremity of Spruce Island shoal, Parry Sound approach, Georgian Bay. On Aug. 31, 1907, an octagonal cribwork foundation, $13\frac{1}{2}$ ft. high, was sunk in 17 ft. of water 2,150 ft. SW x S $\frac{1}{4}$ S true (SW $\frac{5}{8}$ S Sly mag.) from the southern extremity of Spruce Island. During the work of construction the contractors will maintain a fixed red light, visible from all points of approach, on the upper part of the scaffolding.

Mariners are cautioned to keep to the southward of Spruce Island Shoal gas buoy and to slow down to steerage way when passing the construction work to prevent risk of damage from excessive wash.

GEORGIAN BAY.

Lonely Island light exhibited and temporary light withdrawn. The Canadian government gives notice that on Oct. 15, a third order dioptric group flashing white light showing 1 group of 3 flashes every $7\frac{1}{2}$ seconds, thus, flash $\frac{1}{4}$ second, eclipsed 1 second, flash $\frac{1}{4}$ second, eclipsed 1 second, flash $\frac{1}{4}$ second, eclipsed $4\frac{3}{4}$ seconds, will be exhibited from a new lighthouse erected on the northern end of Lonely Island, Georgian Bay, Lake Huron, and the temporary fixed white light shown from a pole on the site of the old lighthouse will be withdrawn. The new light will be elevated 195 ft. above lake level and should be visible 20 miles. It is obscured by trees on the summit of the island over an arc of $79\frac{1}{2}^{\circ}$ from N 33° W true (NNW $\frac{3}{8}$ Wly mag.) to N 46° 30' E true (NE $\frac{5}{8}$ E mag.). The tower is a white octagonal-wooden building, 57 ft. high, with sloping sides, surmounted by a circular iron lantern painted red. It is located on the edge of a cliff 300 yards back from the northern shore of the island and 80 ft. northward of the site of the old lighthouse which was destroyed by fire.

NORTH CHANNEL — MANITOULIN ISLAND — LITTLE CURRENT RANGE LIGHTS.—The Canadian government gives notice that a mistake has occurred in its Notice to Mariners regarding the bearing of this range. Instead of being North correct magnetic it should be South correct magnetic, that is, south going in on the range and north coming out. The true bearing of this range is S $\frac{1}{2}$ E.

LAKE ONTARIO.

KINGSTON HARBOR — REARRANGEMENT OF BUOYS.—The buoys in Kingston harbor have been rearranged as follows: Four red spar buoys mark the west side of Carruthers shoal and Frederick shoal, that is, they mark the eastern edge of the western channel. Two black spar buoys mark the east side of Carruthers shoal and Frederick shoal, that is, they mark the western edge of the eastern channel.

PRESQUE ISLE PT. — FOG ALARM ESTABLISHED.—A fog alarm, consisting of a diaphone operated by compressed air, has been established at Presque Isle

point, Presque Isle peninsula. The diaphone will give, during thick or foggy weather, one blast of six seconds' duration every minute.

The fog alarm building stands 50 ft. to the westward of Presque Isle lighthouse. It is a rectangular wooden building with a high brick chimney. The sides of the building are painted white and the roof red. The horn, elevated 24 ft. above the level of the lake, projects from the south end of the building.

LAKE ERIE.

HEAD OF WELLAND CANAL AND APPROACHES — PORT COLBORNE — BUOYAGE.—Mariners are notified that in buoying the approach to the Lake Erie entrance to the Welland canal, the harbor of Port Colborne and the Welland canal are treated as the head of a river with the current running down into the canal, or, conversely, vessels leaving Port Colborne are supposed to be going against the current up the lake towards its head. The buoyage is therefore arranged so that red buoys are found on the starboard hand and black buoys on the port hand of vessels running out of the canal into the lake.

This notice is issued because some mariners have complained on not finding Port Colborne treated as a closed harbor with red buoys on the starboard hand and black buoys on the port hand in entering from the lake.

MOUTH OF DETROIT RIVER — SUNKEN WRECK.—The schooner George G. Houghton sank in the mouth of Detroit river on Sept. 9, 1907. The wreck lies about 300 ft. north of Bar point lightship. There is about six feet of water over the rail and 10 ft. over the deck; the stern of the vessel in 26 ft. of water is somewhat in the channel, and the wreck is a menace to navigation. A light, placed by Capt. Jas. McKinley, of the tug Am. Eagle, marks the wreck.

Peach Orchard Point gas buoy No. 2, moored in 15 ft. of water at the elbow of a rocky shoal extending NEly from Peach Orchard Point, westerly side of the entrance to Put-in-Bay, northerly side of South Bass Island, reported extinguished, has been relighted.

LAKE SUPERIOR.

SUPERIOR ENTRY.—Dredging is now in progress at Superior Entry and the depth of the approach will be increased to 30 ft. for the entire 350 ft. width on the prolongation of the channel between the piers.

CAUTION TO VESSEL AND TUG MASTERS IN DULUTH HARBOR.—The attention of the United States Lake Survey at De-

troit is directed to the numerous collisions with bridges and bridge piers in Duluth harbor which have occurred in the last year or two, resulting in the serious interruption of railway and highway traffic and imposing considerable loss on commerce in addition to the damages to the structure.

Maj. Graham D. Fitch, United States engineer at Duluth, has issued a warning to masters, citing three cases of collision with the Northern Pacific railway bridge in the last year, occurring in mild weather, and requesting that all possible care be used in passing the bridges. Harbor rule 5 requires that "A steamer must employ a tug or tugs whenever the conditions of weather, currents, etc., make the passage difficult or dangerous to either the vessel or the bridge," and this rule should be strictly observed.

Particular caution is necessary at the Northern Pacific railway bridge owing to the narrowness of the draw openings, and these conditions should receive proper consideration from navigators until the new and larger draw spans now under construction are completed.

RELOCATION OF WRECK OF THE SCHOONER MAGNET.—The United States Lake Survey steamer General Williams, which is engaged in sweeping the west end of Lake Erie, reports the relocation of the schooner Magnet, lying three miles NE. by E. $\frac{1}{2}$ E. (true bearing) from Middle Sister Island.

Sweep wires stretched 26 ft. below the water surface, at present stage, passed over the wreck without striking. The least depth found was 27.5 ft. The water over the wreck is therefore good, and the vessel track clear.

The Lake Survey sweeping operations of this season, both in Lake Erie and Lake Huron, have shown that the wrecks of many years ago, even where they were leveled for the 12 or 14-ft. drafts of the early days, are still obstructions dangerous to 20-ft. navigation. It is the purpose of the Lake Survey to sweep over all the wrecks of the lakes, where they lie in depths likely to make them dangerous, in order to safeguard vessels from disaster by leveling these obstructions for future drafts.

LAKE ST. CLAIR.

At the close of navigation the St. Clair Flats Range lights, located at the head of the old cut or western channel through St. Clair Flats South pass, Lake St. Clair, will be permanently discontinued. The structures will remain to serve as daymarks.

LIGHT NOT TO BE DISCONTINUED.—The

historical coast light at St. Joseph, on the east shore of Lake Michigan, will not be discontinued as the lighthouse board had provided. Marine interests opposed the move so strongly that Senator William Alden of Michigan wired an appeal to L. O. Murray, assistant secretary of commerce and labor at Washington, to delay his order. The light was to have been put out of commission Oct. 17. The light had been in constant service there for over 50 years.

REMOVAL OF TUNNEL AT CHICAGO.—Washington street tunnel, under the Chicago river, is now a thing of the past, having recently been entirely removed. This tunnel, as every marine man is aware, has been a costly annoyance to shipping interests for a score of years past. Twenty feet of water may now be carried through the west draw.

MILWAUKEE BREAKWATER WORK.—Vessel masters are complaining of the dangerous conditions in entering Milwaukee in thick weather. The breakwater is being extended and the extent of it is marked by a gas buoy and boats cannot cross the line of work north of the buoy. Vessel men complain that there is no way of telling the exact location of this buoy in thick weather. They claim that a crib should have been placed there instead of the gas buoy and the fog signal and light also placed on it instead of at the end of the finished breakwater. The breakwater is to be extended 980 ft. The stone foundation will be completed this season, but no cribs will be placed until next year. The government authorities in answering the complaints of vessel masters simply say that they regard the information in their bulletins and supplements as sufficient notice to vessel men. It is very true that these bulletins inform the master of existing conditions but they do not furnish him with the means of safely navigating his vessel by them. When a master has no other way of verifying his position than by means of a fog signal, which is not always to be relied upon, the mere fact that he knows that an obstruction exists, but neither knows his distance nor his bearing from it, is a mighty poor relief to him. Milwaukee is a hard place to find in a fog for the fog whistle cannot always be depended upon. To make the piers and pass the new breakwater work in safety a master must get a good bearing on the fog bell on the north pier. He gets the whistle first but in trying to pick up the bell is where the trouble

comes in, so that in getting a little too far to the northward he is liable to run foul of the new work. If he had any means of judging his distance from the fog whistle he would have no trouble in passing clear of the end of the obstruction.

OLD WRECKS.—The Lake Survey sweeping operations of this season, both in Lake Erie and Lake Huron, have shown that the wrecks of many years ago, even where they were leveled for the twelve or fourteen-foot draughts of the early days, are still obstructions dangerous to twenty-foot navigation.

It is the purpose of the Lake Survey to sweep over all the wrecks of the lakes, where they lie in depths likely to make them dangerous, in order to safeguard vessels from disaster by leveling these obstructions for future draughts.

GAS BUOYS IN POSITION.—President Livingston of the Lake Carriers' Association makes the following announcement:

"The acetylene gas buoys at the outer end of the west channel at Bar Point are now in position. The red buoy carries a white flashlight, flash 5 seconds' duration, interval 3 seconds. The black buoy has a fixed white light."

ENDORSEMENTS FOR COURSE FINDER.

Capt. F. C. Watson, steamer Van Hise: "Your work meets my expectations fully and I consider the Course Finder an exceedingly useful addition to any boat's equipment. Its usefulness is apparent at first glance and I am sure it will come into general use among vesselmen. I shall take pleasure in "boosting" it among my friends and acquaintances, though that is hardly necessary, as it will certainly sell on its own merits."

Capt. A. W. Holmes, steamer Venus: "Your Course Finder and Deviation Log Book are excellent works and are so useful and practical that they should be made a necessary part of every boat's equipment. They are just what has been needed for a long time."

Capt. James Tindall, steamer Midland King: "Your Course Finder and Deviation Log are just the thing for every boat. They not only verify one's work and answer all purposes as well for the posted as the unposted. The work of keeping track of a ship's courses is reduced to almost nothing by their use."

ATLANTIC COAST GOSSIP

Office of the MARINE REVIEW,
1005 West Street Bldg.,
New York City.

By covering the distance from Sandy Hook to Daunts Rock in 4 days, 22 hours and 46 minutes, the *Lusitania* has broken the best eastern record, made by the steamer on her maiden voyage, by six hours. During the voyage the *Lusitania* experienced southerly and northwesterly winds, with heavy seas, and was compelled to slow down. Her average speed for the entire distance was 23.61 knots per hour, and her daily runs were 405, 570, 540, 532 and 570 knots.

The Italian twin-screw steamer *Europa* arrived on Sunday from Geneva and Naples with the first consignment of Italian mail by the direct route. The Italian government will, in the future, ship all mail for America by fast Italian steamers in place of the French and German liners formerly used.

Within a decade we may have a choice between the day and the night lines between New York and Liverpool.—*Louisville Courier-Journal*.

John F. Fisher, of No. 839 North Sixtieth street, Philadelphia, has been appointed a dock master in the Department of Wharfs, Docks and Ferries. Mr. Fisher is a master mariner and has practical ideas of shipping and river-front matters.

At a public demonstration given at the Marconi Wireless Telegraph Station at Glace bay last week, a message was sent from there to Clifden, Ireland, and reply received in five minutes. Independent persons were stationed at both ends, and the accuracy of the test was confirmed by cable. Mr. Marconi states that the local station is transmitting about 3,000 words a day to Ireland.

Cablegrams from London state that the British steamship *Tampico*, from Baltimore for Rotterdam, was abandoned in latitude 47 north, longitude 32 west. The *Tampico* was owned by the Neptune Steamship Navigation Co., and left Baltimore on Oct. 7. She was a regular trader between Baltimore and Dutch ports, and her cargo was a large and valuable one.

The navy department made the first test of briquettes as fuel aboard the torpedo boat *Biddle* last Saturday. It is said that better steaming conditions

were obtained. The briquettes were used in one of the boilers, the other burning coal, and, though much smoke accompanied the test of the new fuel, it is considered due to lack of experience in handling it on the part of the firemen.

The tug *Katherine Moran*, bought by the Isthmian Canal Commission from the Moran Towing Co. of New York, left the city last Friday for Panama via the Straits of Magellan. The *Katherine Moran* is 96 ft. long, breadth, 23 ft.; depth of hold, 13 ft.; \$58,000 was paid by the canal commission for her.

Brunswick Lightship No. 84 has arrived at Charleston, S. C., and will be located at the entrance to Brunswick harbor, St. Simon and St. Andrew's Sounds, Ga. She was built by the New York Ship Building Co.

The *Horace M. Bickford*, a 500-ton schooner, building at the yard of Frank S. Bowker, of Phippsburg, Me., for Captain John Trainor, of West Bath, is scheduled to be launched Nov. 5.

The American and Australian lines have made an addition to their fleet in the shape of the British steamer *Lord Sefton*, which has been chartered for the outward voyage on Nov. 16, and is now on her way to New York from Buenos Ayres. This addition is to accommodate the demand for freight room to New Zealand, due to the increased customs tariff which goes into effect there April 1, 1908. The *Lord Sefton* is of 2,792 tons net register, and will load for Melbourne, Sydney, Wellington and other ports.

The Red Star liner *Finland*, from New York, Oct. 19, for Dover and Antwerp, struck the end of the southern breakwater at Dover on Monday night while entering the harbor. She sustained extensive damage to her bows, and will remain at Dover till the necessary repairs are made. The tremendous force of the impact did some considerable damage to the stonework of the breakwater.

Unable to proceed through the race on her way from New York to Fall River, the steamer *Connecticut* was obliged to put into New London, Conn., on account of the heavy weather Monday morning.

The Neptune liner *Rhode Island* put into Newport on account of the rough sea outside of Narragansett bay. She left Fall River Sunday night for New York, but did not attempt to round Point Judith on account of the storm.

The landing of William Penn on American soil was commemorated at New Castle, Del., on Monday, by the unveiling of an appropriate tablet that was placed in position on the old New Castle county court house by the Delaware Society of Colonial Dames. Governor Lea and staff were present. The portion of the old court house where the tablet was erected was standing when Penn landed—225 years ago.

The North German Lloyd steamship *Wilhelm der Grosse*, which sailed from New York on Tuesday, Oct. 22, broke her rudder while just east of the Grand Banks and approaching mid-ocean. She proceeded on her voyage, steering with her screws, and, though due in Plymouth Monday, arrived at that port Tuesday.

Using the starboard screw for propelling alone, and the port screw for propelling and steering, the vessel averaged a steady 15 knots.

The British steamer *Corfe Castle* arrived at Pier 41, South Wharves, Philadelphia, on Saturday, with a large cargo of jute, skin and burlap from Calcutta via Colombo. She left New York last June for South Africa and the east, and on her arrival in the United States had covered 40,000 miles. After discharging part of her cargo in Philadelphia, she will proceed to New York to finish, after which she will load again for South Africa.

According to the report of the bureau of statistics of the department of agriculture, the causes of reductions in ocean freight rates are largely connected with the increase in size of ocean vessels and with economies in the handling of ships and their cargoes. Both liners and tramp steamers are built now much larger than in former years. The cargo of a tramp ship not infrequently includes the product of 15,000 acres of average wheat land or the cotton yielded by twice that area, and it would take two such cargoes to fill the hold of one of the larger freight liners.

In the competition of passenger lines with tramps, the large ships of the former class are able to secure

cargoes at rates far below what the tramp can accept with profit. The tramp ship, on account of its slower speed, requires but a small part of the coal used by the fast passenger liner, and hence spends much less for fuel and for wages in the engine room than does the liner. The earnings from the passenger traffic and from the mail contracts, as well as from its greater cargo capacity, help to give the liner the advantage.

The Anchor liner Caledonia reported an unusually long spell of heavy weather on her arrival at New York on Monday. The steamer was storm tossed from port to port, and the passengers, among whom were over 300 children, suffered greatly from sea sickness.

The revenue cutter Calumet, which "picked up" the Caledonia, was nearly run down in the dense fog lying on the bay by the municipal ferry boat Manhattan.

The crew of the wrecked fruit schooner J. W. Hutt arrived at New York on the Ward Line steamer Segurancra, from Nassau, on Monday. The J. W. Hutt sailed from San Blas Sept. 24, with a cargo of cocoanuts for New York, but was driven ashore and lost on the Bahama islands. She was a schooner of 349 tons, and was built in 1901.

The annual report of the United States life saving corps of the State of New York for the year ending Oct. 31, shows, among other items, that there were 230 lives saved in greater New York, and 240 cases of assistance to distressed launches, that there were distributed 15 life boats and 71 medicine chests. There are 25 new stations under way, and 20 new life boats have been ordered.

The cruiser Prairie collided with and dismasted the fishing schooner Flora S. Nickerson off Highland Light, on Sept. 27. The Nickerson was bound out for the fishing grounds, having left Boston the previous evening with a crew of 18 men. Both masts were carried away, but none of the crew were injured. The Prairie was headed for Provincetown, but took the Nickerson in tow for Boston.

Some little excitement was occasioned on the departure of the White Star line steamer Arabic by one of the sailors falling from the bow of the vessel into the dock. The sailor

had just disappeared under the surface when another sailor appeared at the rail and dropped into the dock after him. Eventually rescuer and rescued were assisted out of the water, put on board the Arabic, and the ship again started on her voyage.

Several freight handlers at work on the Anchor line steamer Furnessia, at Pier 50, North river, went down into the hold while the vessel was being loaded, chained together, and hoisted to the deck three blazing bales of hemp. The hemp caught fire from loose straw which had been ignited by the blazing oil from a ship's lantern. When on deck the hemp was taken in hand by the crew, who had been called to quarters.

The American Line holds the only contract for carrying first-class mail for this government to Europe, a subsidy amounting to \$4 per mile on the out-going voyage, no matter what the amount of mail may be, being paid. The sum paid the Cunard Line for mail carried on the Lusitania and Mauretania will in no way affect the subsidy paid the American Line.

The temperature under normal conditions is from 78 to 81 degrees, but Capt. Jensen found it as low as 70 to 73 degrees, and barely any current moving. He considers it most important that ship masters should note any changes in the stream.

A violent storm raged along the Newfoundland coast on Monday, shipping at St. Johns being tied up by the gale. Reports from different parts of the coast state that much damage has been done to fishing property, and many marine disasters are feared.

"Give Marconi ten years and he will be sending over the Atlantic 1,000 words a minute by wireless and will be receiving at the same rate of speed. The only limit to speed in sending now is caused by the absorption of the electric waves by the wire or cable. There is no such absorption in wireless telegraphy.

"New York and London will be in free communication by wireless telegraphy before long."

So said Thomas A. Edison at his laboratories in New Jersey last Saturday.

Congratulatory messages were exchanged between Charles E. Magoon, provisional governor of Cuba, and

Clarence H. Mackay, president of the Commercial Cable Co., over the completed New York-Havana cable last Friday.

Fourteen thousand words were transmitted across the Atlantic last Friday by the wireless stations at Clifden, Ireland, and Glace Bay, N. S. This total was made up of a large number of congratulatory messages.

NOT UNDER GENERAL AVERAGE.

Judge Hazel, of Buffalo, has handed down a decision in the suit over the burning of the steamer Hennepin in 1901, at the time the Lehigh Valley freight house was burned at Buffalo. The fire department, in an effort to save adjoining property, prevented the total destruction of the boat. It nevertheless sank and the cargo was ruined. Later the vessel was raised and repaired. The lessees of the Hennepin, the Minneapolis, St. Paul & Buffalo Steamship Co., thereupon brought a libel against the owners, the Manistee Transit Co., for \$6,535.39 damages, under the law of general average contribution. Judge Hazel declared that the libellants have failed to prove that the attempt of the port authorities was to save the ship and cargo. The case does not come under the law of general average because the cargo was not thrown overboard to save the vessel. The libel was dismissed with costs. The case will be carried to the higher courts.

YOUR HOME OR WINTER ADDRESS.

MARINE REVIEW subscribers that have both a summer and winter address are notified to furnish this office at once with their home or winter address. Give your old address and state the date you wish the change to be made. By doing so you will run no risk of missing any issue of the paper. Those who do not as yet know where they will winter can make the change later in the season.

SPECIAL NOTICE.

THE MARINE REVIEW Course Finder and Long's other navigation works for the lake master are on sale at Geo. B. Carpenter & Co., Chicago, and Joys Bros. & Co., Milwaukee. Those desiring to review the work before purchasing may do so by calling on either of the above firms.

The submarine signal at Detour was installed last week by the Submarine Signal Co. and is now in successful operation.

QUESTIONS FOR MASTERS AND MATES.—NO. 47.

634. What are sound shadows?
 635. What is the cause of sound shadows?
 636. What is meant by difference of latitude?
 637. Is difference of longitude and departure the same thing?
 638. How much is one degree of latitude equal to in nautical miles?
 639. What are Traverse Tables?
 640. In any course less than four points which is the greater, the difference of latitude or departure?
 641. Which is the greater in a course that is more than 4 points?
 642. What is the complement of a 5-point course?
 643. On what parallel of latitude is a degree of longitude equal to 30 nautical miles?
 644. What is the mean latitude of the lakes?
 645. What does a degree of longitude equal to on this parallel?

QUESTIONS FOR WHEELSMEN AND WATCHMEN.

TWENTY-FIRST INSTALLMENT.

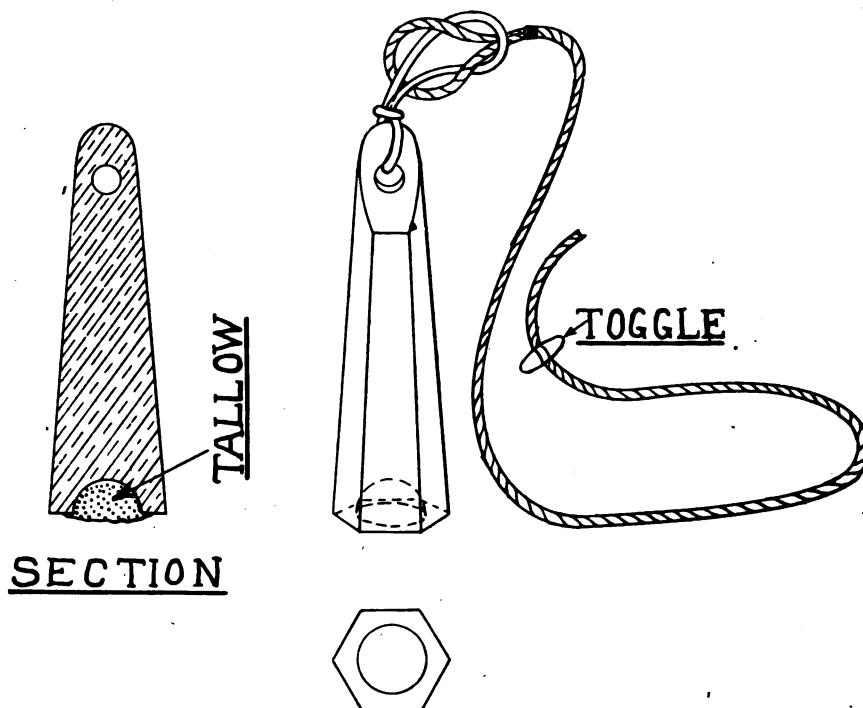
236. What does for'ard of the beam mean?
 237. What is a ship's beam?
 238. Is beam and abeam the same thing?
 239. What does athwartships mean?
 240. Is beam, abeam and athwartships in the same direction?
 241. What does amidships mean?
 242. What is the amidships fore and aft line of a ship?
 243. What is the difference between a fore and aft line and the amidships fore and aft line?
 244. At what part of a vessel would the amidship fore and aft line and a line drawn athwartships through amidships pass, or at what point would the intersection of these lines come?
 245. What is the difference between a beam line and an athwartship line?
 246. A steamer is steering NE, what points of the compass will it be impossible for another boat coming up from astern to see her forward bright light?
 247. Through what points of the compass would you be able to observe the above steamer's green light?

The general staff of the French navy has decided to recommend the construction of three battleships of 21,000 tons in order to keep pace with England and Germany in the construction of large ships.

ANSWERS TO QUESTIONS FOR WHEELSMEN AND WATCHMEN.

NINETEENTH INSTALLMENT. PUBLISHED OCT. 17.

213. From 7 to 10 lbs., sometimes 14 lbs.
 214 and 215. An arming is a filling of tallow or soap placed in the hollow end of a sounding lead. The purpose of this arming is to bring up a specimen of the bottom that it touches, so that the quality of the bottom struck by the lead may be compared with the description of it found on the chart for the ship's position, determining therefrom the actual position of the ship. This is an important duty aboard ship, and should be practiced at every opportunity. Note.—Sand, mud, gravel, etc., will readily stick to this arming. If the bottom is rocky, etc., it will reveal itself by the indentures shown in the arming. The arming should project a little below the hollow so that it will have every opportunity of touching the bottom before the lead does. The following illustrations will explain this better than words.



Showing the Hand-Lead, the Toggle and the manner in which the leadline is fastened to the lead itself. Also the cavity in the bottom and the tallow arming.

216. Two marks, 7 and 10.
 217. It is not marked because it is a deep.
 218. The shore on which the wind is blowing; on a ship that shore that is to leeward.
 219. It may be either the port or starboard sides; these sides have

nothing to do with it. It depends on which side the wind is blowing; if the wind is blowing on the starboard side, then the lee side is the port side; but if the wind is blowing on the port side then the starboard side is the lee side. Therefore, the lee side is the opposite side to which the wind is blowing on.

220. Starboard helm means that the helm is put to starboard, the ship going to port. With a straight gear (cables leading straight from wheel to helm) if wheel is rolled to starboard the helm goes to port and the ship to starboard. With a cross gear steering wheel and helm move the same way.

221. Consult Rules 2, 3, 4, 5, for answer.

222. At intervals of not more than two minutes ring the bell rapidly from three to five seconds.

223. Forty-eight feet.

224. A noose made in a rope by a certain kind of knot. The bowline is one of the most useful of knots because it will not slip and even when greatly strained it is easily untied. It should be tied with

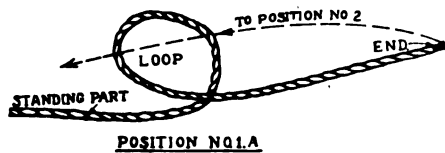
dexterity by everyone who has to handle ropes. To tie a bowline knot—hold the end of the rope in the right hand, and the standing part in the left. Lay the end over the standing part, turn the bight of the standing part over it, so that it forms a loop with the end through. Lead

the end around the standing part above the loop so made, and then down through the loop and haul taut.

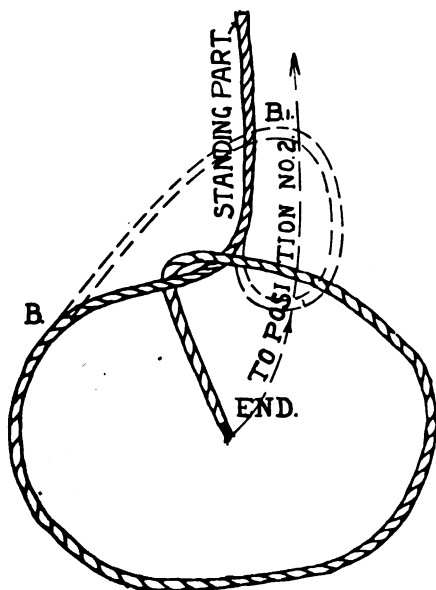
The following illustrations show the moves necessary to be made in tying the bowline. No. 1A shows the loop made first and then the end passed through the loop. The correct way is to make the loop and bring the end through it in the one operation. This is done by holding the standing part in the left hand and the end in the right hand; lay the end over the standing part with the right hand and with the same hand make the loop by a twist of the wrist to the right. The diagrams show this graphically:

AMONG OUR NAUTICAL VISITORS.

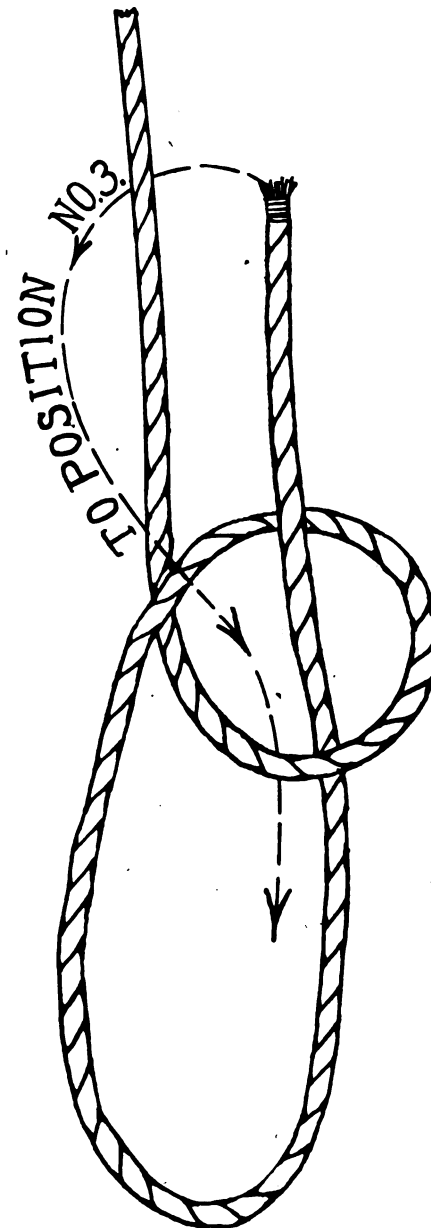
Capt. A. W. Holmes, master of the steamer Venus, of the Gilchrist fleet, was among MARINE REVIEW callers while his vessel lay in port. Capt. Holmes is one of the progressive navi-



gators on the lakes and one who rightly believes in mixing a little theory with his practice. He says, "A man cannot know too much about his profession, and anything that is done toward raising it to a higher standard is a move in the right direction, and one that is not only appreciated but approved by the right-



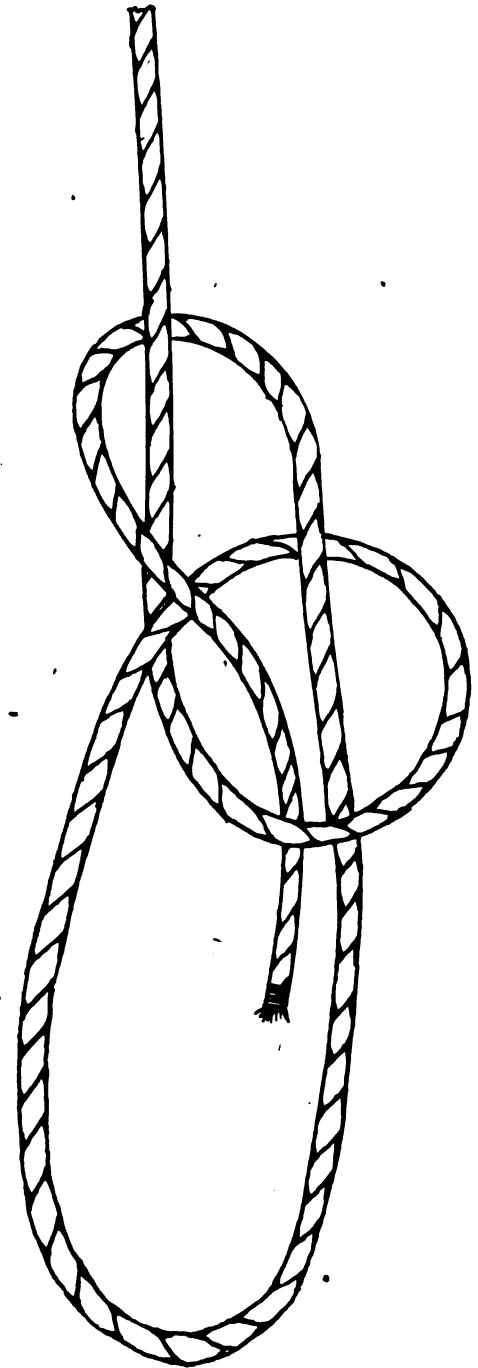
POSITION NO. 1.



POSITION NO. 2.

Capt. Holmes has studied navigation for years, but he intends going into it the coming winter on a larger scale than ever. The skipper and a Methodist minister in his home town will take up the study together, not only as a matter of knowledge, but also as a recreation. This is certainly a sensible way of spending a winter, and one that might be imitated by many others to a very good advantage. Capt. Holmes says that his parson friend is an adept scholar and took to the study as natural as a

duck to the water; and that during the summer he made a trip with him and practiced some of his theoretical knowledge. Capt. Holmes says the man of gospel had no trouble in understanding and working the sun com-



POSITION NO. 3.

pass on the trip and that he was greatly interested in its performance. Capt. Holmes has recently been promoted to the command of the steamer Venus from the steamer Olympia.

Capt. James Tindall, master of the steamer Midland King, was among our

nautical visitors. Capt. Tindall in speaking of the Course Finder says that he makes a fine course from Whitefish Pt. to Passage island by porting an eighth of a point from the compass course shown with St. Mary's river upper range over stern. The true course from a point two miles north of Whitefish Pt. heading on to Passage island light is N $58\frac{1}{2}^{\circ}$ W, which is NW by W $\frac{1}{4}$ W small; this is also the correct magnetic course because the variation is about as much Wly. at beginning as it is Ely. at ending. The correct magnetic bearing of St. Mary's upper range is NW x W $\frac{1}{4}$ W. Capt. Tindall says that to steer the same course as shown on this range would fetch too far south of Passage island. This is the way it is given in the Course Finder, but the true course is figured from a point two miles north of Whitefish Pt. to a mile south of Passage island light. Capt. Tindall takes his departure at one mile north of Whitefish Pt. and this and the fact that the true course is NW x W $\frac{1}{4}$ W small will account for the necessity of him porting $\frac{1}{8}$ point from the range given. However, as it is better to fetch Passage island a little northerly rather than southerly, and as all boats do not take their departure two miles north of Whitefish it will be well to keep this in mind and to port the $\frac{1}{8}$ -pt. on upper St. Mary's range. According to W. J. Stewart, in charge of the Canadian hydrographic survey, the average or mean correct magnetic course from a point one mile south of Passage island light to a point $2\frac{1}{4}$ miles north of Whitefish Pt. is S $59\frac{1}{2}^{\circ}$ E, which is a trifle better than SE x E $\frac{1}{4}$ E. This reversed would be a trifle better than NW x W $\frac{1}{4}$ W, so that a magnetic course of NW x W $\frac{1}{4}$ W, as given in the Course Finder ought to be the correct thing if the vessel's departure was correct.

To make this course good from Passage island to Whitefish Pt. port $\frac{3}{8}$ pt. from the course shown with Welcome island light over stern and Thunder cape light ahead. The true bearing is S 61° E and the correct magnetic bearing S 64° E (SE x E $\frac{5}{8}$ E large).

Fort Williams gas buoy, Welcome island light and Thunder cape are all practically in the same line. This gas buoy and Welcome island light afford a means of getting the course across the lake, on the same bearing as Welcome island light and Thunder cape light.

The correct magnetic bearing of Fort Williams range is W $\frac{5}{8}$ S and

E $\frac{5}{8}$ N. The correct magnetic course from Thunder cape to Passage island is E $\frac{1}{2}$ S; port $1\frac{1}{8}$ points from the course shown when coming out on Fort Williams range. This is a good check on this course.

Port Arthur range is SE x E $\frac{5}{8}$ E correct magnetic. Correct magnetic course from Welcome island to Thunder cape SE $\frac{3}{4}$ E; port $\frac{7}{8}$ point from the above range.

The correct magnetic bearing of the mostly southerly points of lands of the Welcome islands is SW x W $\frac{1}{4}$ W and NE x E $\frac{1}{4}$ E.

The SE shore of Pie island runs true S 64° W and S 61° W correct magnetic, or SW x W $\frac{3}{8}$ W large.

Thunder cape to Duluth, mean correct magnetic course, SW $\frac{5}{8}$ W. Starboard $\frac{5}{8}$ point from the bearing of Welcome island or $\frac{3}{4}$ point from the bearing of the SE shore of Pie island.

Mean correct magnetic course from Rock of Ages to Duluth is SW $\frac{3}{4}$ W; therefore, starboard $\frac{1}{2}$ point from the Welcome islands bearing and $\frac{5}{8}$ point from Pie island bearing.

The navigator should be very cautious in navigating in the vicinity of Rock of Ages on account of local disturbance of the compass needle.

QUESTIONS AND ANSWERS DEPARTMENT.

Ques.—Does a deckhand have to pass an examination to become watchman on a freighter? If so, about what should he know to pass such examination? SAILOR.

Detroit, Mich., Sept. 23, 1907.

Ans.—Yes. The Seamen's Union requires this before one can become a member of that organization, or before one can obtain its "blue book." You should know how to "box" the compass; read and mark the lead line and know how to throw it; know the lights carried by a steam vessel, where they belong, etc.; how to heave the log, take it in, care for it, and how to read a log as well as set it; how to splice, and a few other things of this nature. The examination is not difficult but it is essential that the candidate know something of the foregoing subjects. If there is more information you want along this line write in for it.

Ques.—I want to become a watchman on a steamer; what are my duties in regard to fire and boat drills?

Ans.—If you have been decking you have taken part in these drills, and have been instructed what to do according to the signals given. Every steamer has posted up a Station Bill for this

very purpose. This will tell you what your duties are in case of fire or other accident. There is no uniform Station Bill, the assigning of the crew to the various stations being left to the discretion of the master. This should be one of the first things a new man going aboard should study. The Station Bill will also inform you what the different signals indicate and just what your duty is in connection with them.

IRON SITUATION.

While the recent developments in the financial world have had the expected effect of increasing the caution of buyers in the already dull iron market, no general demoralization has resulted. The receiverships, which have been made necessary recently, are due rather to a lack of capital than of orders. The Steel Corporation is curtailing production in plants not so well located with respect to the market. Pig iron remains exceedingly quiet with talk of lower prices. Specifications on plates and sheets are very heavy. An order for plates and bars for a new lake freighter was placed in the week by the American Ship Building Co. Copper is recovering in prices.

LUMBER RATES.

The new schedule of rates adopted by the Lumber Carriers' Association shows a general advance of 50 cents, as follows:

Head of the lakes to lower Lake Michigan	\$3 00
Head of the lakes to river ports and Lake Erie	3 00
East half Lake Superior to districts named above	2 75
Georgian bay ports to districts named above	2 50
Lake Huron to rivers and Lake Erie	2 37½
Georgian bay to Lake Michigan and Lake Erie (free on rail)	2 50
Georgian bay to Lake Michigan and Lake Erie (when taken from dock)	2 62½
Upper Lake Michigan to rivers and Lake Erie	2 62½
Lower Lake Michigan to rivers and Lake Erie	2 75
Rate from head of lakes to Lake Ontario (Or 50c over the Buffalo rate.)	3 50
From head of lakes to Oswego and Kingston (Or 75c over the Buffalo rate.)	3 75
Head of lakes to Bay City	2 75
Upper Lake Michigan to Chicago, dry lumber	2 25
Upper Lake Michigan to Chicago, green lumber	2 37½
Georgian bay to Chicago	2 62½
Lake Huron to Chicago	2 37½
Lake Huron to Lake Erie	2 37½
Georgian bay to Lake Erie	2 62½
Upper Lake Michigan to Lake Erie	2 62½

Mr. George L. Graham, formerly superintendent and treasurer of the American Ship Windlass Co., and for 26 years connected with that company, has become associated with the Chase Machine Co. of Cleveland and will enter upon his new duties Nov. 1.

A QUERY.

To the Editor:—Is it correct to use knots in speaking of distance, as the total distance covered was 2,000 knots at an average speed of 22 knots per hour? Is it right to say knots per hour? I believe you have explained this in your columns but I have forgotten the explanation.

MARINER.

Knots relate to speed only and not to distance. When knots are spoken of in regard to distance it means nautical miles, as knots is a measure of speed, and not of distance. Knots signify speed per hour, that is, it is not necessary to say so many knots per hour for the word knot means *speed per hour*. The proper way of writing or speaking the above would be "The total distance covered was 2,000 miles at an average of 22 knots." The words speed and knots per hour are superfluous. Knots means "nautical mile per hour," so that it is unnecessary to put "per hour" after it, and too, it should never be used in referring to distance. The knot depends for its existence on the nautical or sea mile, of which it is a part. The knot and the nautical mile are of the same measure, but one relates to speed only while the other may be used in expressing both speed and distance. The nautical mile and the hour are the units for measuring the knot. The knot and nautical mile are equivalents only in containing the same number of feet as a measurement. Although the tendency today is to exactness in scientific terminology, thus leading to clearness of statement, there is a growing practice of making an improper use of the word by those who ought to know better. The prevailing idea is that knot and nautical mile are one and the same thing, and the word knot is used to prevent any possible confusion with the statute or land mile. To use speed per hour with knot is as unnecessary as to say 5 statute miles at 5,280 feet to the mile.

THE MAGNETISM OF STEEL HULLS.

To the Editor:—Since you like to hear from your readers and have invited them to send in things of interest, I have taken the liberty of sending you the following article concerning the magnetic properties of steel ships. I have noticed a number of times that the MARINE REVIEW has called attention to the importance of this matter, and I should think that lake ship yards and the masters of new boats would look into this subject a little more than they do. However,

I am sending it to you for this very purpose, knowing that nearly every master will read and digest it with interest.

A NAVIGATOR.

The magnetism of steel hulls has recently been given a comprehensive demonstration at Bremen, Germany. The first observation, taken 10 weeks after the double bottom of a ship had been placed and riveted, showed the magnetic power to be 25 per cent. A month later the induced magnetism had grown to 34 per cent, and so on until just before launching, a magnetic power of 57 per cent. of the horizontal force of the earth was reached.

When launched the boat was swung into a position nearly in reverse direction to that which she was built with the result that in a period of 20 days the magnetic power had decreased to 15 per cent. As a consequence the standard compass on the flying bridge went to sea without an adjusting magnet, and the steering compass with only one.

A sister ship after launching was not swung and her head pointed in the same direction during completion as when building. The result was an increase in the magnetic power to 68 per cent. of the earth's power, consequently seven adjusting magnets were required to counteract the effect and make the compass point somewhere near correctly.

MISCELLANEOUS ITEMS.

Capt. John McDermott, master of the barge Iron City, who fell into the hold of that vessel recently, died last Saturday as a result of injuries received at that time.

The tug Excelsior which was sunk in the lower Detroit river recently, was raised last Friday and taken to Oades ship yard at Detroit for repairs. It took a six-inch syphon to keep her clear of water. The tug is in bad shape.

The new steamer Edwin N. Ohl, built for W. H. Becker, left the Wyandotte yard of the American Ship Building Co. on Saturday last on her maiden trip. She was the first vessel to be inspected under the new ruling concerning hatch covers and fasteners. She was proved satisfactory in every particular.

The tug A. C. Harding and lighter Reliance of the Great Lakes Towing Co.'s fleet will be stationed in the Detroit river during the balance of the season. The lighter Newman will be stationed at Port Arthur. This will put the Great Lakes Towing Co. in first class shape to care for the accidents of the fall months.

The Pittsburg Coal Co. has announced its intention to construct the largest coal dock in the world at Duluth, to meet the growing demand for coal in the northwest. This project will mean much for the development of that vast territory, as it will assure a plentiful supply of coal the year around. The dock will be located next to that of the United States Steel Corporation, which is the largest dock of any kind in the world. The steel for the big new dock will be made by the Steel Corporation in Pittsburg.

The tug Satisfaction of Sheboygan has been sold by Groh Bros. to Anderson & Smith of Marinette, Wis.

The last fragment of the Washington street tunnel at Chicago was dredged out last week and fully twenty feet of water is now available. This obstruction has for years been a very costly annoyance to vessels.

The steamer H. H. Brown, belonging to the fleet of the Northwestern Transit Co., Detroit, left the dry dock at Buffalo last week after receiving repairs amounting to \$35,000. Twenty-seven new plates have been put on the steamer.

The Pittsburg Coal Co.'s steamer Alcona collided with the swing bridge between Tonawanda island and Island street on the main shore of the Niagara river last Thursday and narrowly escaped landing the structure into the stream. The bridge was shoved from the track on which it was turned, the wheels broken, and the structure left balancing on the abutment. Several planks in the bow of the Alcona near the gunwale were crushed.

The wooden steamer Case owned by the Gilchrist Transportation Co. of Cleveland was sunk in the Detroit river abreast of Amherstburg on Wednesday of last week by the steel steamer Mariska of the Pittsburg Steamship Co.'s fleet. The Case has a hole 4 ft. wide in her starboard side, extending from the rail to the keel. Capt. Harris W. Baker of Detroit has been awarded the contract for raising the steamer at a cost of \$2,500. Work will be begun at once.

DULUTH GRAIN SHIPMENTS.

Duluth, Oct. 29.—Receipts and shipments from Duluth for the week ending Oct. 26, 1907, were as follows:

	Receipts.	Shipments.
Wheat	2,181,766	2,377,424
Corn	5,741	53,282
Oats	160,236	140,109
Rye	48,592	56,000
Barley	662,315	572,290
Flax	1,343,670	687,289

Capt. Crawford Large, a life long resident of Ashtabula, O., died in that city this week. He was one of the oldest sailors on the lakes, having begun sailing in 1853. He quit sailing many years ago and has since held various offices in Ashtabula.

The annual meeting of the Association of Passenger Steamboat Lines will be held at the New Willard hotel, Washington, on Tuesday and Wednesday, Dec. 10 and 11. George A. White, of the Hudson River Day line, is president, and W. F. Herman, of the Cleveland & Buffalo line, is secretary of this association.

BIDS FOR PURCHASE OF REVENUE CUTTERS.

Bids received at the division of Revenue Cutter Service, Treasury Department, Washington, D. C., and opened Oct. 17, for the purchase of the revenue cutters Fessenden and Boutwell, were as follows:

	Fessenden.	Boutwell.
Lee Kimball, Mobile, Ala.	\$2,200.00	\$2,210.00
John S. Gregory, Perth Amboy, N. J.	1,550.00	850.00
Edward Heath, Washington, D. C.		900.00
Thomas Butler & Co., 23 Medford St., Boston, Mass.	1,187.50	911.50
O'Connor Bros., 49 Ellery St., So. Boston, Mass.	2,185.96	1,461.87

BIDS FOR ROCK REMOVAL.

Bids received at the office of the Inspector of the Third Lighthouse District, Tompkinsville, N. Y., on Oct. 17, for furnishing chain cables for eight new lighthouse tenders and light vessel No. 89, were as follows:

	1½-in. chain cts. per lb.	1¼-chain cts. per lb.
Carter Iron Co., Pittsburg, Pa.	*6.48	*6.44
Lebanon Chain Works, Lebanon, Pa.	7.19	6.98
Seneca Chain Co., Kent, O.	6.8	6.75

BIDS FOR DREDGING IN JAMES RIVER, VA.

Bids received at the United States Engineer Office, Twenty-second and K streets, Northwest, Washington, D. C., opened Oct. 10, for dredging earth and rock in James river, Va., were as follows:

	133,400 cu. yds. earth per cu. yd.	5,750 cu. yds. rock per cu. yd.
Coastwise Dredging Co., Norfolk, Va.	39 c	\$12.95
P. Sanford Ross, Inc., Jersey City, N. J.	37.1c	11.10
Norfolk Dredging Co., Norfolk, Va.	35 c	12.40

BIDS FOR NAVAL SUPPLIES.

Bids received at the Bureau of Supplies and Accounts, Navy Department, opened Oct. 15, for material and supplies for the navy yards, included the following:

Schedule 340.—Construction and Repair.	
Class 124—Norfolk—One Steam Windlass.	
American Ship Windlass Co., Providence, R. I.	\$1,190.00
Hyde Windlass Co., Bath, Me.	875.00
Class 126—Two Steering Engines.	
Hyde Windlass Co., Bath, Me.	\$1,950.00
Williamson Bros. Co., Arrango Ave. and Cumberland St., Philadelphia, Pa.	2,500.00
	2,050.00
	1,700.00

Schedule 357.—Yards and Docks.

Class 162—Brooklyn—Norfolk—84 Feet Rubber Gasket.

Mallison & Grossmann, 23 Warren St., New York	\$504.00
Revere Rubber Co., 59 Reade St., New York	336.00
Gutta Percha & Rubber Mfg. Co., 126 Duane St., New York	566.16

Schedule 363.—Steam Engineering.

Class 233—Brooklyn—450 Square Yds. Packing.

Diamond Rubber Co., 1876 Broadway, New York	\$1,588.50
Jenkins Bros., 71 John St., New York	1,820.50
Peerless Rubber Mfg. Co., 16 Warren St., New York	2,500.00
Revere Rubber Co., 59 Reade St., New York	3,150.00
Wm. G. Stevenson, 110 Race St., Philadelphia, Pa.	1,420.00
F. S. Banks & Co., 93 Warren St., New York	1,805.00
B. F. Goodrich Co., 66 Reade St., New York	1,335.00
H. W. Johns-Manville Co., 100 William St., New York	1,940.00
Manning, Maxwell & Moore, 85 Liberty St., New York	1,402.00
Wm. R. Thompson, 704 Lafayette Ave., Brooklyn, N. Y.	1,296.00
Vermilye & Power, 17 Battery Pl., New York	2,802.50

Class 234—Brooklyn—70 Running Yards Sheet Packing.

Diamond Rubber Co., 1876 Broadway, New York	\$498.70
Jenkins Bros., 71 John St., New York	428.40
Revere Rubber Co., 59 Reade St., New York	520.00
Manning, Maxwell & Moore, 85 Liberty St., New York	338.00
Wm. R. Thompson, 704 Lafayette Ave.,	

Brooklyn, N. Y. 364.50
Class 235—Brooklyn—3,000 Pounds Asbestos Packing.

Keasbey & Mattison Co., 100 John St., New York \$2,100.00

Fallison & Grossman, 23 Warren St., New York 1,950.00

New Jersey Asbestos Co., 52 Dey St., New York 2,250.00

H. W. Johns-Manville Co., 100 William St., New York 2,100.00

John D. Westbrook, Norfolk, Va. 1,710.00

Class 236—Brooklyn—3,500 Pounds Garlock Packing.

Brooklyn Forge Supply Co., 21 Franklin St., Brooklyn, N. Y. \$4,010.00

Crandall Packing Co., 136 Liberty St., New York 3,835.00

Garlock Packing Co., 136 Liberty St., New York 4,101.30

Revere Rubber Co., 59 Reade St., New York 3,850.00

Wm. G. Stevenson, 110 Race St., Philadelphia, Pa. 1,635.00

John B. Roache, 350 Fulton St., Brooklyn, N. Y. 7,835.00

John D. Westbrook, Norfolk, Va. 2,021.00

BIDS FOR REPAIRING BUOYS.

Bids received at the Office of the Inspector of the Fourth Lighthouse District, at Philadelphia, Pa., opened Sept. 26, for making repairs to iron buoys and appendages, were as follows:

*Kensington Ship Yard Co., Philadelphia, Pa. \$1,090.75

Pusey & Jones Co., Wilmington, Del. 1,727.00

*Contract awarded.

BIDS FOR NAVAL SUPPLIES.

Bids received at the Bureau of Supplies and Accounts, Navy Department, opened Sept. 22, for materials and supplies for the navy yards, included the following:

Schedule 398.—Equipment.

Class 31—Brooklyn—55 Boat Anchors.

Berry & Aikens, 36th and Wharton Sts., Philadelphia, Pa. \$477.10

R. W. Geldart, 2 Stone St., New York 466.50

Motley, Green & Co., 66 Broad St., New York 501.05

Manhattan Supply Co., 127 Franklin St., New York 451.00

New Jersey Foundry & Machine Co., 9 Murray St., New York 682.50

John B. Roache, 350 Fulton St., Brooklyn, N. Y. 496.00

Excelsior Equipment Co., Pittsburg, Pa. 450.00

Class 32—Brooklyn—25 Boat Chains.

R. W. Geldart, 2 Stone St., New York \$184.80

Hayden-Corbett Chain Co., Columbus, O. 431.25

I. B. Kendall, Washington, D. C. 498.75

Motley, Green & Co., 66 Broad St., New York 357.50

Manhattan Supply Co., 127 Franklin St., New York 412.50

Manning, Maxwell & Moore, 85 Liberty St., New York 344.50

New Jersey Foundry & Machine Co., 9 Murray St., New York 750.00

H. E. Roucher Mfg. Co., 91 Maiden Lane, New York 487.50

Excelsior Equipment Co., Pittsburg, Pa. 561.25

Class 33—Boston—200 Tons American Hemp.

William Bush Nelson, Lexington, Ky. \$76,000.00

John Percy Scott, Lexington, Ky. 62,600.00

E. F. Spear & Sons, Paris, Ky. 64,400.00

Class 34—Brooklyn—33,000 Yards Flax Canvas.

De Graw, Aymer Co., 34 South St., New York \$16,434.00

O'Jaffe & Pinkus Co., 103 Franklin St., New York 18,183.75

Class 38—Brooklyn—Six Navigational Sounding Machines.

D. Ballauf, Washington, D. C. \$840.00

John Bliss & Co., 128 Front St., New York 780.00

T. S. & J. D. Negus, 140 Water St., New York 840.00

Schedule 401.—Ordnance.

Class 70—Washington—3,000 Pounds Granulated Cork.

Armstrong Cork Co., Pittsburg, Pa. \$120.00

D. Kahnweiler Sons, 2 Dover St., New York 120.00

John R. Livezy, 1933 Market St., Philadelphia, Pa. 120.00

Schedule 403.—Steam Engineering.

Class 92—Portsmouth—One Valve Reseating Machine.

Bramman, Dow & Co., 239 Causeway St., Boston, Mass. \$325.00

F. S. Banks & Co., 73 Warren St., New York 325.00

Central Metal & Supply Co., 609 E. Lombard St., Baltimore, Md. 325.00

Fairbanks Co., Boston, Mass. 325.00

Frevert Machine Co., 41 Dey St., New York 325.00

Frye, Phipps & Co., 25 Pearl St., Boston, Mass. 325.00

R. W. Geldart, 2 Stone St., New York 325.00

Handeau-Buck Mfg. Co., St. Louis, Mo. 325.00

Knox & Bro., 96 John St., New York. 325.00

Montgomery & Co., 105 Fulton St., New York 325.00

Manhattan Supply Co., 127 Franklin St., New York 325.00

Manning, Maxwell & Moore, 85 Liberty St., New York 325.00

John B. Roache, 350 Fulton St., Brooklyn, N. Y. 325.00

Excelsior Equipment Co., Pittsburg, Pa. 300.00

Class 96—Brooklyn—40 Square Yards Gladiator Packing.

Double Service Packing Co., 430 Walnut St., Philadelphia, Pa. \$112.00

H. W. Johns-Manville Co., 100 William St., New York 160.00

E. F. Keating, 454 Water St., New York 120.00

New Jersey Asbestos Co., 52 Dey St., New York 150.00

Simmons Hardware Co., St. Louis, Mo. 102.00

Class 97—Brooklyn—20 Square Yards Sheet Packing.

Double Service Packing Co., 430 Walnut St., Philadelphia, Pa. \$46.80

Manning, Maxwell & Moore, 85 Liberty St., New York 54.00

Revere Rubber Co., 59 Reade St., New York 120.00

Simmons Hardware Co., St. Louis, Mo. 51.00

William R. Thompson, 704 Lafayette Ave., Brooklyn, N. Y. 52.60

Class 98—Portsmouth—Brass Angle Valves.

Handlau-Buck Mfg. Co., St. Louis, Mo. \$922.14

Jenkins Mfg. Co., 20 Vesey St., New York 2,235.50

Vermilye & Power, 17 Battery Pl., New York 1,465.00

CANAL CIRCULAR 393.

Bids opened by the General Purchasing Officer of the Isthmian Canal Commission, on Oct. 21, for material and supplies, included the following:

Class 14—Water and Steam Hose.

Boston Hose & Rubber Co., Cambridge, Mass. \$7,310.00

Handlau-Buck Mfg. Co., St. Louis, Mo. 13,633.00

New York Belting & Packing Co., 19 Chambers St., New York 7,818.90

Republic Rubber Co., 47 Warren St., New York 6,710.00

Revere Rubber Co. of New York, 59 Reade St., New York 8,650.00

Sprague Electric Co., 527 W. Thirty-fourth St., New York 10,460.00

William G. Stevenson, 110 Race St., Philadelphia, Pa. 5,110.00

United & Globe Rubber Mfg. Co., Trenton, N. J. 6,827.50

National Electric Supply Co., Washington, D. C. 1,500.00

Motley, Green & Co., 66 Broad St., New York 1,790.50

Charles E. Robidoux, 1012 Chemical Bldg., St. Louis, Mo. 1,620.00

Henry R. Worthington, 114 Liberty St., New York 1,607.64

Gardner Governor Co., Quincy, Ill. 1,295.00

Class 17—1,200 Feet Hoisting Chain.

F. S. Banks & Co., 73 Warren St., New York \$2,436.00

W. Bingham Co., Cleveland, O. 1,800.00

Carter Iron Co., Park Bldg., Pittsburg, Pa. 2,016.00

Handlau-Buck Mfg. Co., St. Louis, Mo. 1,920.00

Lebanon Chain Works, Lebanon, Pa. 2,067.00

Manhattan Supply Co., 127 Franklin St., New York 2,001.00

Motley, Green & Co., 66 Broad St., New York 2,470.00

New Jersey Foundry & Machine Co., 9 Murray St., New York 1,972.80

Charles E. Robidoux, 1012 Chemical Bldg., St. Louis, Mo. 1,680.00

Vermilye & Power, 17 Battery Pl., New York 2,448.00

REPAIRS TO LIGHT VESSEL NO. 49.

Bids received at the Office of the Inspector of the Fifth Lighthouse District, Baltimore, Md., opened Oct. 8, for making repairs to light vessel No. 49, were as follows:

Marine Railway, Machine & Boiler Works, Baltimore, Md. \$1,346.53

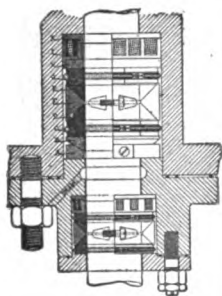
Spedden Ship Building Co., Baltimore, Md. 1,491.25

Skinner Ship Building & Dry Dock Co., Baltimore, Md. 1,623.00

Chesapeake Marine Railway Co., Baltimore, Md. 1,687.00

Boaz Bros., Baltimore, Md. 1,974.00

The name of the Toledo White Lead Co., Toledo, will be changed on Nov. 1 to that of Hardy Paint & Varnish Co.



Katzenstein's Self-Acting Metal Packing

For PISTON RODS, VALVE STEMS, etc. of every description for Steam Engines, Pumps, etc., etc. Adopted and in use by the principal Iron Works and Steamship Companies in this and foreign countries.

FLEXIBLE TUBULAR METALLIC PACKING, for slip-joints on Steam Pipes, and for Hydraulic Pressure.

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CLEVELAND, OHIO

Manufacturers of **LEATHER BELTING**

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INSURANCE

HULLS and CARGOES

DIRECT REPRESENTATIVE OF LEADING
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MARINE SPAR

Resists the destructive action of salt or fresh water, moisture, etc., BETTER than any other make of Spar Varnish in the market.

It works freely, dries hard and is exceedingly durable.

WRITE for our (free) spindle finished with Oceana and test for yourself, the wonderful water-resisting properties of this specialty.

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THE LARGEST VARNISH WORKS IN THE WORLD

29 Broadway,
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LONDON

BERLIN

BRUSSELS

Canadian Branch: International Varnish Co., Ltd., Toronto

The Upson-Walton Co.

CLEVELAND, OHIO

AMONG the first vessels that we fitted out was the Nellie Redington. That was nearly forty years ago, but the Nellie Redington is still afloat.

Among the latest vessels that we have fitted out is the Henry Phipps.

The Redington carries 1,500 tons; the Phipps, 12,000 tons.

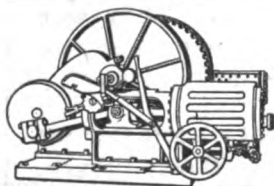
As 1,500 is to 12,000 so is The Upson Walton Co. of thirty-six years ago to the Upson Walton Co. of today.

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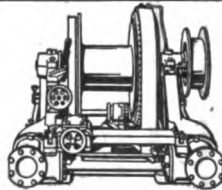
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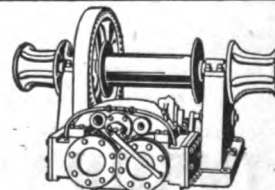
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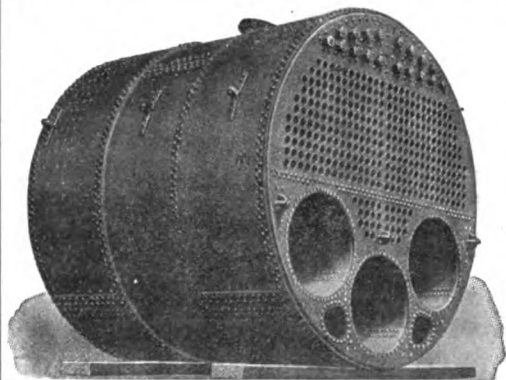


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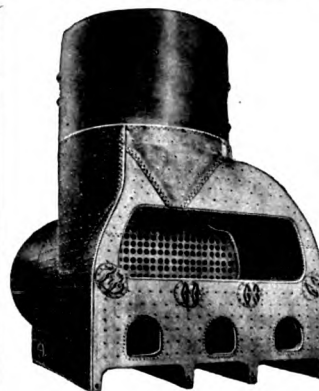
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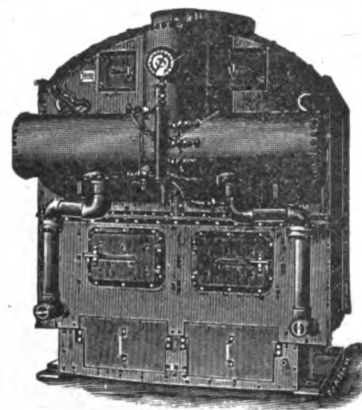
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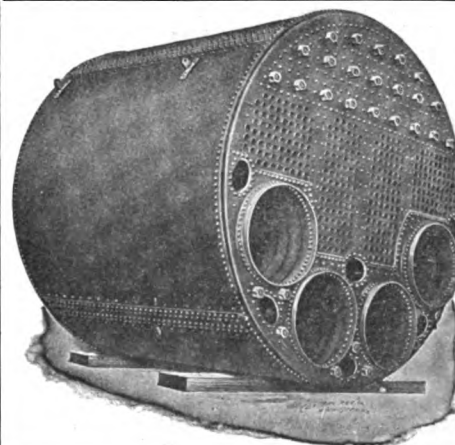
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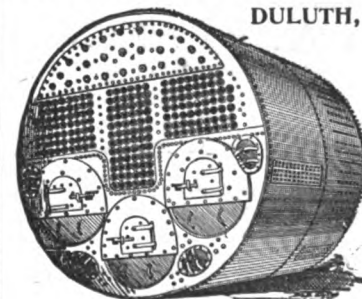
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